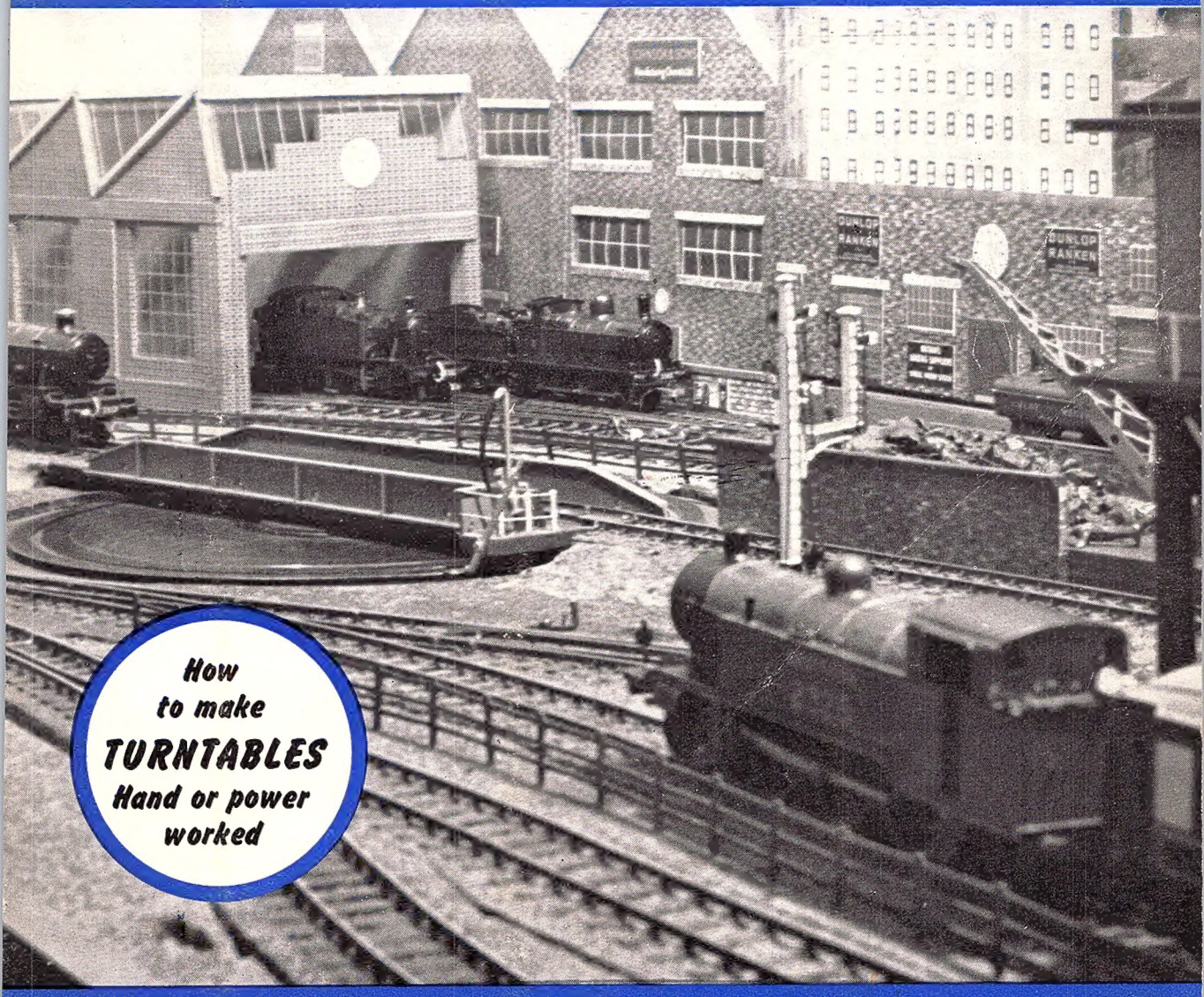
RAILWAY MODELLER

For The Average Enthusiast



VOL 7 1956 1/6 OCTOBER

ORDER FROM SOUTHGATE! YOU SAVE TIME AND MONEY

LAY SPIKED TRACK!

Lay it yourself with spiked track components. Spiked track is cheap, strong and realistic and it is great fun to lay. Sleepers, pkt. **2/6.** Spikes **2/5** Universal rail, per dozen **5/5** Rail joiners, pkt. of 24 **1/11** Beatikork underlay, 18 x 12, **1/6**

Instruction leaflet free.

Beattie's Better Baseboards 6d.

BEATI-KORK sheets, 18 x 12, rubber bonded, **1/6** (post **6d.**)

PECOWAY PERFECTION TRACK, 18in.

	Track	Points
Super A N/S	**3/8**	**19/11**
H/D N/S	**4/10**	**22/10**
Standard		
A	**2/7**	
H/D	**3/8**	
R (for Tri-ang)	**3/1**	**21/–**
T (for Trix)	**3/11**	**27/3**

Points kits are available.

SOME PECO PRODUCTS
(everything stocked)

Rail joiners, pkt. of 24	**1/11**
Point levers : Uni-lever	**1/10**
G.W.R.	**3/3**
Ballast underlays, pkt.	**2/7**
Rail : B.H. N/S, doz.	**6/–**
F.B. N/S, Scale	**7/6**
T/S	**4/6**
Rail cleaner	**1/10**
Rail paint	**1/4**

Full Peco price list free

TRIX SUPER SERVICE

T.T.R. gives the most play value of all the model railways. Our service for T.T.R. owners is comprehensive and we stock all spares.

BILTEEZI SHEETS

Scale Building Cut-outs. House, church, inn, school, country station, platforms, loco shed, signal boxes, goods shed, coaling stage. **1/10** each (post **4d.**). Full list free.

Balsa pack for Bilteezi. Six sheets 18 x 3 x 1/16 for lining buildings, etc. **3/-** (post 9d.).

10% CONVERSION BONUS

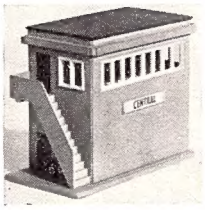
FOR OCTOBER ONLY

We want to clear all conversions before the Christmas rush. Send us your full order for flexible or spiked track now with your track for conversion and we will allow you 2/- in the £ extra on all tip-top track received before October 31. Work out the value of your track from this chart, add 10% and order your flexible.

EXCHANGE PRICES FOR TIP-TOP TRACK

	Dublo	Trix	Tri-ang
Straights	**1/6**	**1/–**	**1/–**
Curves : ordinary	**9d.**	**6d.**	**6d.**
large radius	**2/–**	—	**1/9**
Halves, quarters, shorts	**9d.**	**1/–**	**6d.**
Terminal or uncoupler rail	**1/6**	**1/6**	**1/–**
Remote uncoupler and switch	**5/–**	**7/6**	—
Points : old type hand	**2/6**	**5/–**	—
new type hand	**5/–**	**10/–**	**5/–**
remote new type with switch	**12/6**	**15/–**	**12/6**
Buffer stop	**1/–**	**2/6**	**6d.**
Isolating rail and switch	**2/6**	—	—
Diamond or level crossing	**5/–**	**5/–**	**5/–**

Locomotives and rolling stock also exchanged



LIGHTING THE LAYOUT

Light adds realism to the layout. Tri-ang, Dublo, Trix and Scale fans can all add these fascinating lighting necessities to their layouts as all operate on 12/16 volts A.C./D.C.

Lighted signal box with whistle **28/6.**
Lighted signals : manual operation, home or distant **8/8,** home and distant **10/9 ;** bracket signal, home or distant, **13/11.**
Lighting units : two bulbs, station or coach, **8/3.**
Yard lamp **6/9.**

SECONDHAND BARGAINS

Our tip-top secondhand track and equipment offers a great saving in price with full guarantee of satisfactory service. Supplies are always short before Christmas, so please order early.

Trix twin curves	**1/6**	straights	**1/6**
Hornby-Dublo curves	**2/–**	,,	**2/6**
Tri-ang 13½in. curves	**1/6**	,,	**1/9**

(Price list of bargains sent for 4d.)

WRENN TRACK

	2-rail	3-rail
Track, yd.	**4/8**	**6/2**
Points	**10/6**	**12/3**
,, 15in.	**9/4**	**10/10**
Diamond	**11/8**	**13/7**
Crossover	**25/8**	**28/7**
Junction	**36/4**	**39/11**
Terminal	**1/11**	**2/1**

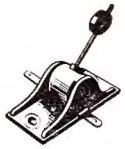
Buffer stops **2/6,** fishplates **4/3,** ballast (6ft.) **11d.,** screws **2/6,** point levers **1/9.**

All post extra.

GEM FLEXI-TRAK
The track with scale sleepers.

	2-rail	3-rail
Track, yd.	**4/9**	**6/3**
Points	**10/10**	**12/6**

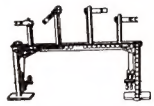
Fishplates **1/10.** Catalogue **1/-.**



SUPER POINT LEVER

Universal throw.

2/5 (post **4d.**)



BRIDGE SIGNAL

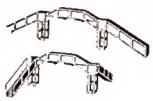
7/6

(post 1/-)

MULTI-BRIDGE

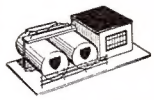
10/-

(post 1/6)



BASIC STATION

Complete with posters only **4/11** (post **1/6**). Through or island platform in beaticement.



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9/11
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2/6
(post 4d.)

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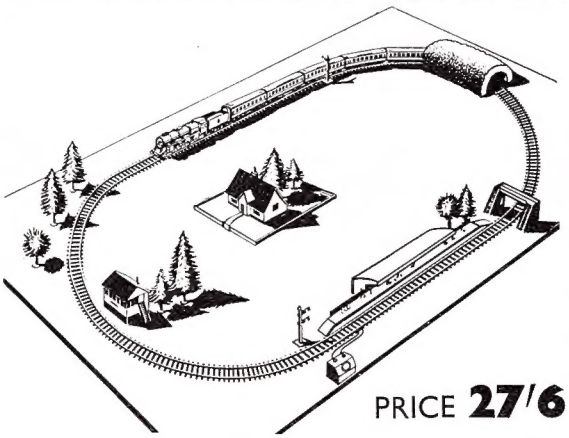
Now the new WRENN "OO" GAUGE TRACK SET



PRICE **27/6**

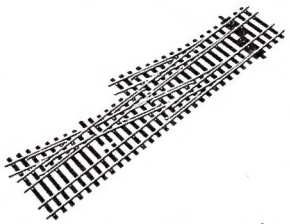
TRACK SETS, 2-rail, 15in. radius oval, size 56in. x 32in. over-all. This set provides the most realistic and inexpensive railroad available. Ready for use with all the 2-rail "OO" gauge locos and rolling stock. No wiring or construction necessary, just screw down to a baseboard and connect up to any type of controller. Ideal for the beginner or the person without time for more elaborate construction. Simple extensions can easily be made from extra track sections, while for more elaborate extension we recommend the use of the famous WRENN FLEXIBLE TRACK and POINTWORK, which can be directly connected with fishplates. It is first-class for realism, reliability, smooth running and unbeatable value for money. No. 1 Set—12 x 1ft. sections: 8 curves and straights, including power rail and screws.

BASEBOARD FRAME KITS. Well made in hardwood with ready-made dowel joints. Only require screwing together. Size 5ft. x 3ft., price **27/6** ; 6ft. x 4ft., price **35/6.**

Ask your retailer to show you the WRENN range of Universal products or send a 9d. postal order direct for sample of track and new literature, or 2½d. stamp for literature only.

and more recent additions to the **WRENN UNIVERSAL RANGE**

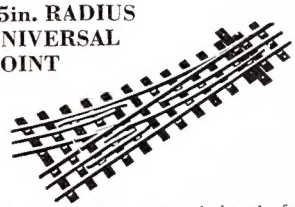
UNIVERSAL DOUBLE JUNCTION



A much-sought-after track formation and a first-class example of WRENN track-work. Presented at an extremely moderate price it will accept all types of locos and rolling stock. Complicated track formations are considerably simplified by the inclusion of this ready-made three-in-one unit. Ideal as an entry to stations, it can be used to great effect as the only item of pointwork in a simple track oval, and for full employment of double-track layouts it is an absolute essential.

Length 16¼in.. radius 24in.
Type 0063 (l-h) and 0064 (r-h) 2-rail, **36/4**
Type 0065 (l-h) and 0066 (r-h) 3-rail, **39/11**

15in. RADIUS UNIVERSAL POINT



This point has been designed for saving space and with a length of only 6⅞in. is ideal for small layouts or wherever space is limited. It has a very sturdy construction and being Universal is suitable for all types of rolling stock.

Type 0057 (l-h) and 0058 (r-h) 2-rail, **9/4**
Type 0059 (l-h) and 0060 (r-h) 3-rail, **11/-**

UNBREAKABLE TREES

(Pattern No. 6686/56)

Unbreakable, inexpensive, realistic and well made. Provided with a detachable rubber sucker base.

They are ideal for children and modellers alike, adding just that touch of atmosphere so essential to even the smallest of layouts. They also have great possibilities for use with many types of toys and models. Supplied in three standard types.

Type 0069A, B and C, height 6in., price **1/-** each.

BALLAST STRIP

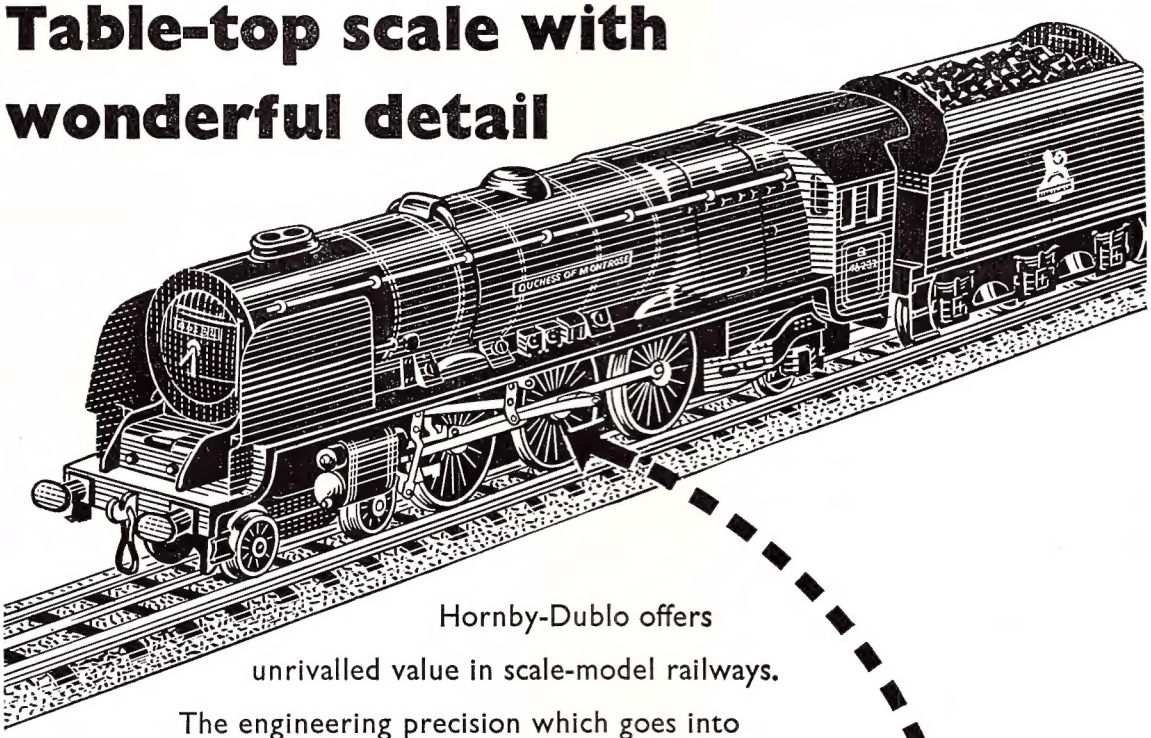
(Pattern No. 6687/56)

At last a fully resilient underlay at a moderate cost, which is easy to lay. It is unique, giving wonderful realism, complete flexibility for curves and gradients and smooth, silent running. Type 0052 (1⅛in. x 3/32in. thick strip in 6ft. 3in. lengths) **11d.** each

WRENN

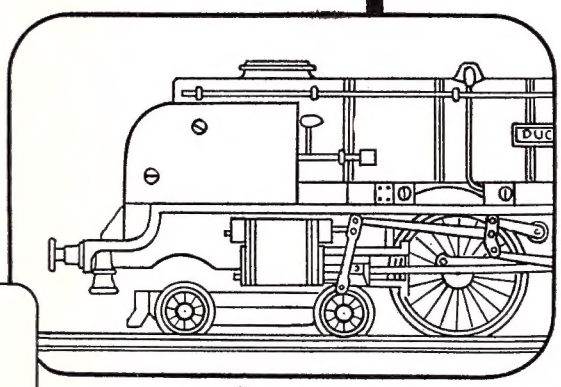
HONYWOOD ROAD, BASILDON, ESSEX

Table-top scale with wonderful detail



Hornby-Dublo offers
unrivalled value in scale-model railways.
The engineering precision which goes into
every part ensures long life and accurate operation.
For lasting pleasure there's nothing to equal
the Hornby-Dublo system, worked by remote control.
A whole railway can be set up on a table.

The "Duchess of Montrose" is a superb "Pacific" Locomotive of the type used by British Railways to haul main line expresses. Note the Walschaerts valve gear, smoke deflectors, double chimney and other wonderful accurate modelling on the Hornby-Dublo Locomotive.



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ELECTRIC TRAINS

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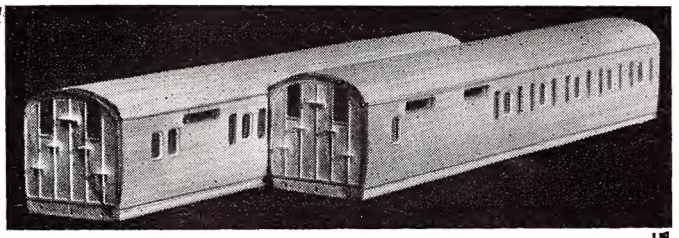
L.N.W.



These Kits for "The Premier Line" are of the usual CCW precisely machined wood parts, with ready cut windows and slots for the "glass," and include the valuable additional details on exclusive CCW Cast Metal Ends.

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L.N.W.-2H 50ft. 3rd Brake (6 compts.)	11/6	3/6	13/6
L.N.W.-3H 50ft. 1-3 compo. (5 1st, 2 3rd)	11/6	4/–	13/6
L.N.W.-4H 57ft. 3rd Class (9 compts.)	11/6	4/–	14/–

CCW Drawings for these Kits **2/2½** each post free.

"OO" BOGIES GALORE!

CCW 4-wheel Bogies are wonderful value at only **6/-** per pair (inc. P.T.), equalized, for 2- or 3-rail operation.

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Also L.M.S. 6-wheel 10/- per pair, and trucks for U.S., C.P.R., and New Zealand.

"OO" WHEELS "HO"

CCW offer a range of hard Plastic Wheels for 2- or 3-rail :

14mm. British Coach ; 12mm. 8-spoke (Wagon) ; 12mm. Disc (for Vans) ; 10.5mm. U.S. Passenger ; 9.5mm. U.S. Freight. (Also useful for Narrow Gauge and Trams.)

Packet of 2 pairs on axles.
Price only 1/-, tax 2½d.

CATALOGUES

Please send **1/-** (post free) for CCW (April) General Catalogue, 40 pages of Kits, Accessories, and information for "O," "OO" and "HO." For "O" gauge send also **6d.** (post free) for (April) "Scaloh" Supplement.

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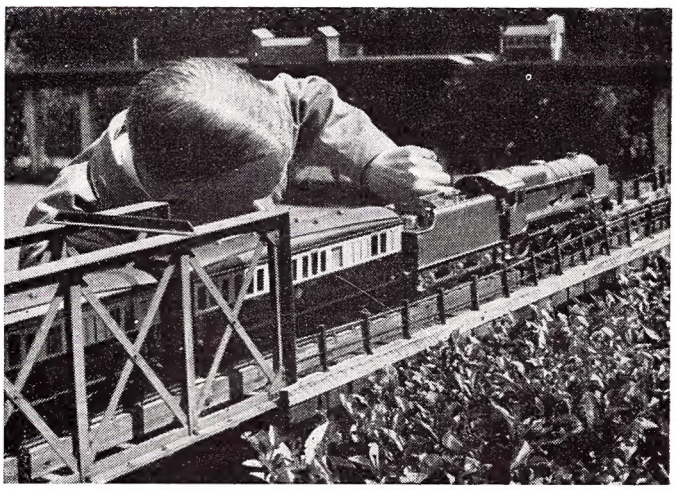

Our staff at London and Manchester branches will be very pleased to answer any questions and give you practical advice concerning your outdoor railway, or write to us at Northampton for full details.

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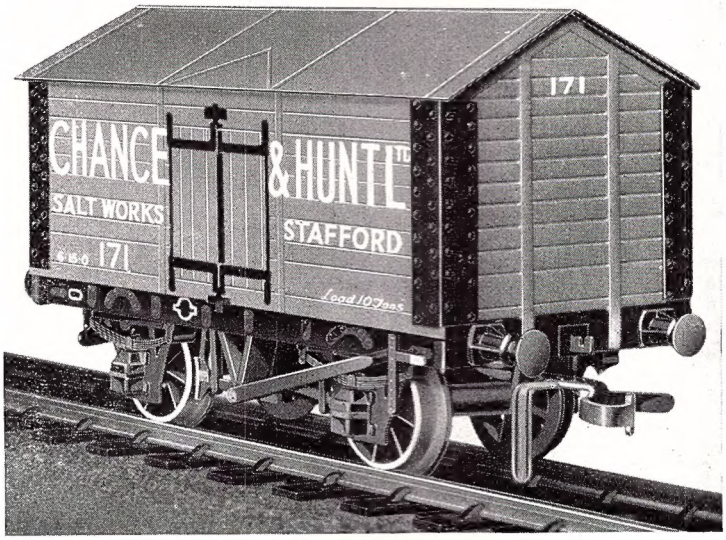
More colourful PECO Salts!

00 GAUGE



16·5 GAUGE

Featured this month:

CHANCE AND HUNT

Another colourful vehicle to brighten your train. The new Chance and Hunt salt van has a red oxide body, with dark stone lettering, black corner plates, buffer beams and solebars.

Also available : Stafford, Mangers and Saxa.

SEE THEM AT YOUR LOCAL DEALERS

PECO SALT WAGON KITS, already coloured and lettered, are built to the same high-standard specifications as the PECO OPEN COAL WAGON KITS and include spoked nylon wheels, actual working axle-box springs, sprung buffers and brass bearings, and each kit is *absolutely complete,* including wheels, Peco-Simplex auto couplings and simple, illustrated, printed instructions. Send s.a.e. for free leaflet.

ONLY 7/6 ALL TYPES

Peco are justly proud to have introduced as long ago as April 1954 spoked wagon wheels and axles moulded in nylon. These wheels are completely unbreakable and will outlast any metal wheel. They provide extremely smooth, quiet running and, being moulded integrally with the axle, cannot possibly come out of gauge. Two types of Peco spoked nylon wheels are available—A/HD for scale and Hornby-Dublo systems, R/T for Tri-ang and Trix. Ideal for converting proprietary rolling stock to run on other systems.

ONLY 1/4 per set

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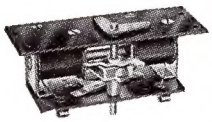
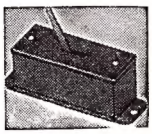


BRILLIANT NEW
SOLENOID MOTOR
S.M.3 MARK II

Exclusive H & M features include: positive lock; operates from 1 amp transformer; automatic switch, enabling it to be used with or without flash-switch; above- or below-panel mounting; lever for auxiliary hand operation; $\frac{1}{8}$in. to $\frac{3}{16}$in. throw; rustproofed; 12 to 20 volts A.C. or D.C.; powerful, small, robust.

PRICE 9/6 (post 6d.)

THE H & M
FLASH
SWITCH



Lever-operated, self-indicating passing-contact switch for solenoid operation. Positive action with self-cleaning silvered contacts and quick break to eliminate arcing, in instrument-finished case.

Model F.S.2 as illustrated 4/6
Model F.S.2/LC as above but less case 3/6
(Postage 6d. extra)

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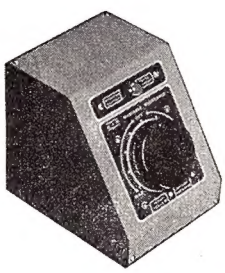
This new feature, entitled GRADED RESISTANCE CONTROL, has been designed by H & M engineers to provide the most up-to-date advance in power control. G.R.C. enables the operator to alter at will the basic resistance of his controller without the necessity of changing resistance mats. A tiny switch provides instant selection of high, medium or low resistances with full-scale control in each case. One controller now becomes suitable for all motors up to 1 amp working load! Invaluable where mixed stocks are run, using motors of varying current consumption. And exclusive to H & M!

MULTIPACK CONTROL UNIT
NOW INCORPORATING G.R.C.!

This famous controller is now further improved by the addition of G.R.C. (see above) at no extra charge! With its Airflow Resistance, Overload Cut-out, single-knob control, instrument - finished case, suitable for single supply or split potential circuits, adaptable to all motors up to 1 amp working load, it is undoubtedly the finest controller on the market, irrespective of price. Fully tested and guaranteed.



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POWER UNITS

Transformer/Rectifier Unit, supplying 12 volts D.C. direct from 200/250 volts A.C. mains. Includes 16 volts A.C. output for solenoid operation. Fully protected by overload cutout. With 3-core mains lead, switch and pilot light. Output sockets enabling the unit to be used independently or plugged into other Multipack Units. In metal case with the superb H & M instrument finish. Fully tested to ensure perfect safety, and guaranteed.

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For the Average Enthusiast Specializing in Small Scale Railway Modelling

VOL. 7. No. 72. OCTOBER 1956

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BACK NUMBERS

Back numbers of most issues of the " Railway Modeller " from November 1951 are available, price 9d. each plus postage (3d. first copy, 1d. each additional copy). We regret that certain issues are now out of print, while stocks of many others are low.

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NEXT MONTH

Our Railway of the Month will be the Rev. Neil Henderson's North Lomond Railway, a fine " OO " gauge system. A preview of the Model Railway Hobby Show will be included in this enlarged issue.

THE LOBBY

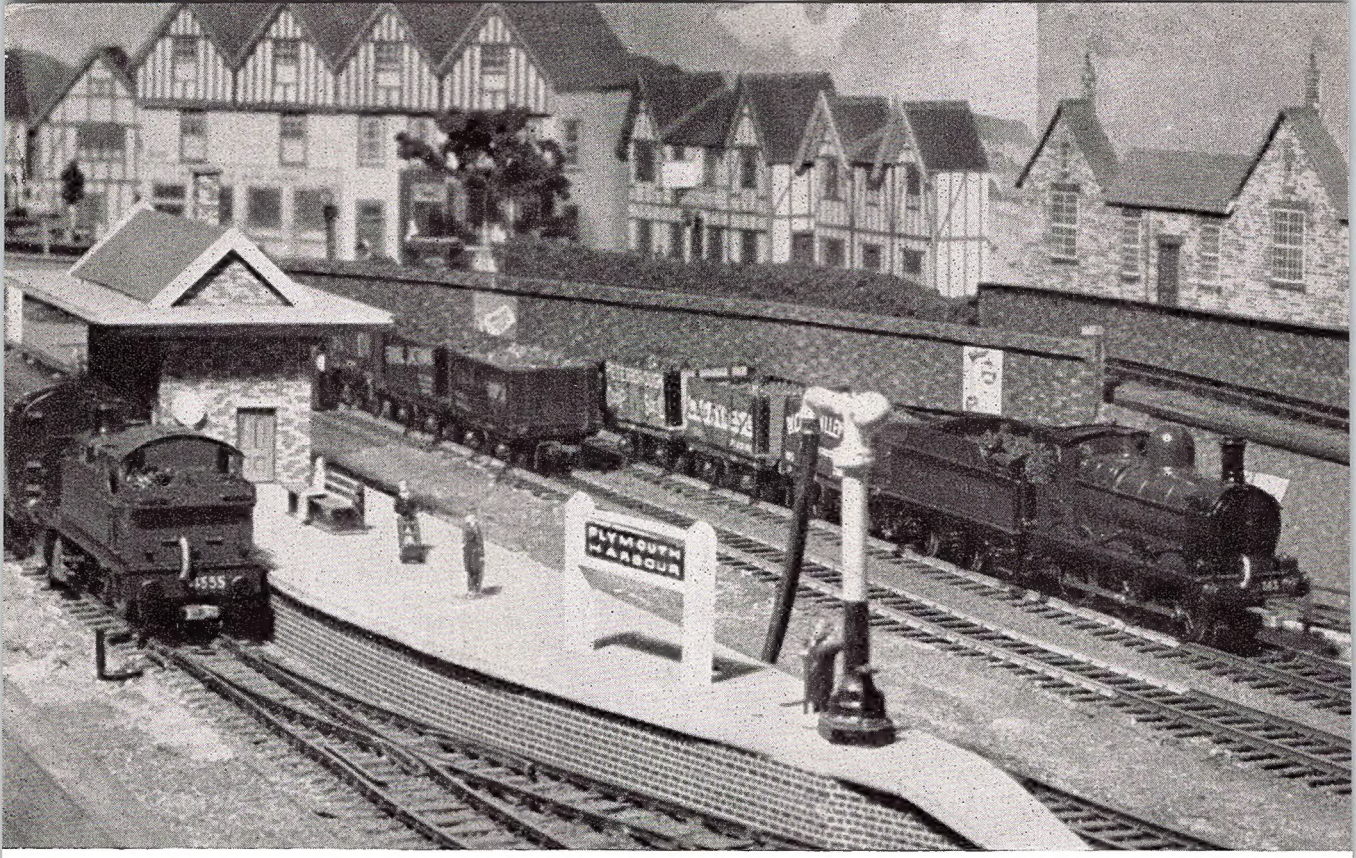
OF the many small items that arise to cause confusion and dismay in our otherwise peaceful hobby, perhaps the most serious is the vexed question of scale accuracy. We are all more or less agreed that our object is to model a real or imaginary prototype to a chosen scale, from which it appears that the closer one adheres in every respect to scale the more accurate the model will be.

Unfortunately, a railway is a very large thing indeed, and we are therefore faced with the alternative of modelling with extreme accuracy and detail the last 100 yards or so of a small country branch or diverging from strict scale accuracy, thus reducing the inherent quality of our model though presenting in broad outline a convincing picture of some portion of the main line. This seems to indicate that the elaborate system with several stations and branches is foredoomed to second place—unless one has a barn to spare. Something must be wrong. Could it be that scale accuracy is not the only criterion of excellence in railway modelling ?

A miniature railway is the only complex model which as a matter of course is intended to be operated in exactly the same fashion as its prototype, and therefore in addition to any question of scale we should also consider operation. It is, we suggest, perfectly permissible to take considerable liberties with dimensions, provided these are taken in order to improve the overall operating characteristics of the layout. A complex layout which makes no pretence to true scale proportions, but which can be operated correctly to timetable, can be, and frequently is, an outstanding example of railway modelling. What do you think ?

COVER PICTURE

Exeter West station on A. S. Taylor's West Country layout.



Railway of the Month

RETURN TO THE WEST COUNTRY

by A. S. Taylor

IN the December 1953 issue of the RAILWAY MODELLER there appeared a description of my original West Country layout. Early in 1954, however, I left the sunny climes of Bournemouth for the more prosaic joys of industrial Birmingham, and in consequence the railway had to be dismantled.

In purchasing the new house, great care was taken to see that it contained a suitable room for the railway and workshop equipment, and I was fortunate in securing one measuring 11ft. x 10ft. 3in. This gave me far greater scope than in the first instance, and in consequence I decided to rebuild the layout, retaining only the original Mounts Bay terminus and turntable facilities, but converting this to a through station on the curve having two terminal bays. Since it no longer figures as a terminus, Mounts Bay now became the central station on the line and was renamed Exeter West.

In addition to the turntable, three lines were provided for loco storage and a new engine shed accommodating six or seven locomotives was built and installed, and may be seen in the accompanying illustrations.

Reference to the layout plan will show that in addition to Exeter West there are two other stations, both small terminals representing Mounts Bay and Plymouth Harbour respectively. The design of the new layout was mainly the work of my cousin, Noel Cheney, while a close friend and model associate, Eric Longbottom, put in the finishing touches.

The steady acquisition of additional passenger rolling stock called for the provision of carriage sidings, and two of them are located at Mounts Bay, each capable of holding seven main-line coaches. Goods traffic is chiefly catered for at Plymouth Harbour, where two sidings are located at the rear of the station itself and a small three-line goods yard lies forward of platform 1.

The main line runs behind the two termini, thus providing a far greater length of run as they climb and fall in turn along the length of each side, crossing one another beyond Mounts Bay. In this way the advantages of a continuous run are obtained without a train appearing to be constantly chasing its tail. The track is still largely of Peco Individulay, using many of the components from the earlier layout, but subsequent additions and expansions have been carried out in Pecoway. This has proved very successful, taking away much of the drudgery of plain track making, while the fact that it can be smoothly curved to any reasonable radius is a great boon. As with the Individulay, it is laid on $\frac{7}{32}$in. plywood bases pre-cut as required on a Hobbies fret machine and was ballasted before the Pecoway was pinned down.

Top facing page : Plymouth Harbour with Clyton in background. Gnat " Ariel," small Prairie Dean 0-6-0.
Above : Bulldog class " Cormorant " pulls out from Mounts Bay.

Readers might be interested in the village of Clyton-on-the-Hill, lying at the top of the grade behind Plymouth Harbour and depicted in one of the photographs. The village is built in the form of a triangle on a raised base to fit a corner site, and considerable use has been made of " Bilteezi " sheets. Their normal form has, however, been radically amended, both the front and rear components of each building being amalgamated in one common frontage, thus almost doubling the output obtainable from each sheet. Additional roofing paper has been employed where required, while the buildings themselves are constructed from plywood with thickish card roofs. The road and pavements are of hardboard construction, and the various buildings screw on to this from underneath. A hand-painted scenic flat and various small items to give life to the village complete the picture. I hope later to deal with the opposite corner in a similar way, but substituting a factory centre for the village.

The layout is to 4mm. scale, 16.5mm. gauge, and is, of course, still two-rail. Power is supplied from my former home-built power unit, and this has been wired to give a working current of 14.5 volts. I find that this slight stepping up of the voltage gives a markedly increased performance over the more usual 12-volt output, and in some seven years of operation there has been no adverse effect on the motors.

Since my earlier article appeared there have been a number of changes and additions to the locomotive stud and rolling stock, and for those who may be interested these are now made up as follows:

LOCOMOTIVES

1. G.W.R. Dean 2301 class 0-6-0.
2. G.W.R. " Saint " class 4-6-0 " Clevedon Court."
3. G.W.R. 9700 class 0-6-0 pannier tank.
4. G.W.R. 4500 class small Prairie tank.
5. G.W.R. 4300 Mogul.
6. G.W.R. " Bulldog " class 4-4-0 " Cormorant."
7. S.R. J1 class 4-6-2 tank.
8. Exley S.R. motor coach (Portsmouth stock).
9. B.R. 0-4-0 tank "Ariel."
10. Bo-Bo electric (ex-Rivarossi rebuilt and amended to B.R. colours).

Locos Nos. 1 to 7 are all home-built, while "Ariel " is a much-modified " Gnat," and was the subject of an article in the December 1955 RAILWAY MODELLER.

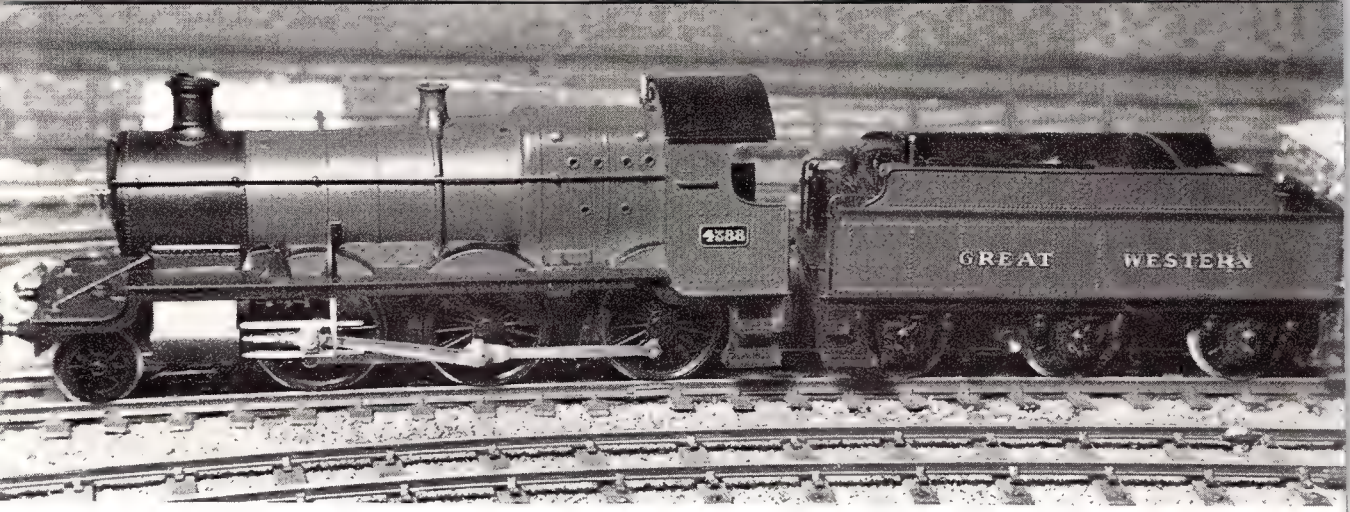
COACHES

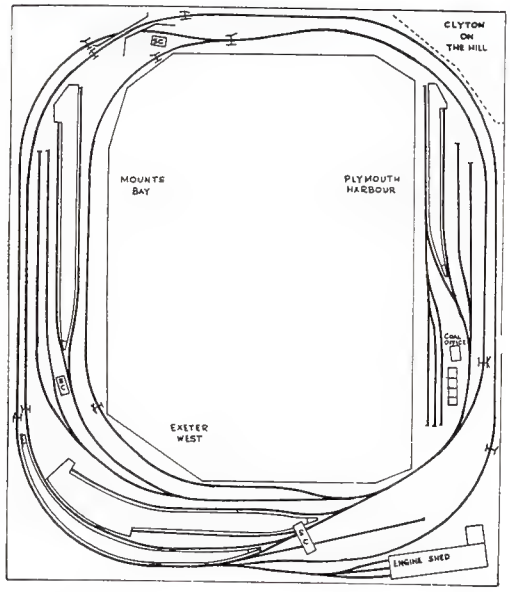
These are all Exley products unless otherwise stated:

Three S.R. suburbans.
One S.R. trailer coach for the Portsmouth stock.
Five L.M.S. main-line corridor.
Three G.W.R. suburbans.
Five G.W.R. main-line corridor.
One G.W.R. " Ocean Mails."
One G.W.R. " Royal Mail " T.P.O.
One G.W.R. Siphon G (home built).
One G.W.R. main-line (home built).
Four Pullmans (amended Graham Farish), comprising " The Cornishman."

GOODS STOCK

This consists mainly of Peco Wonderful Wagons at present, but I am gradually adding a number of hand-built fully detailed wagons of metal construction, some of which may be seen in the photographs. These are built of nickel silver and spray finished. So far I have completed a G.W.R. 20-ton brake van, a 12-ton ventilated van, a 6-ton L.M.S. refrigerator, a 12-ton L.M.S. van and a P.O. wagon, while a N.E. fruit van is at present on the stocks.



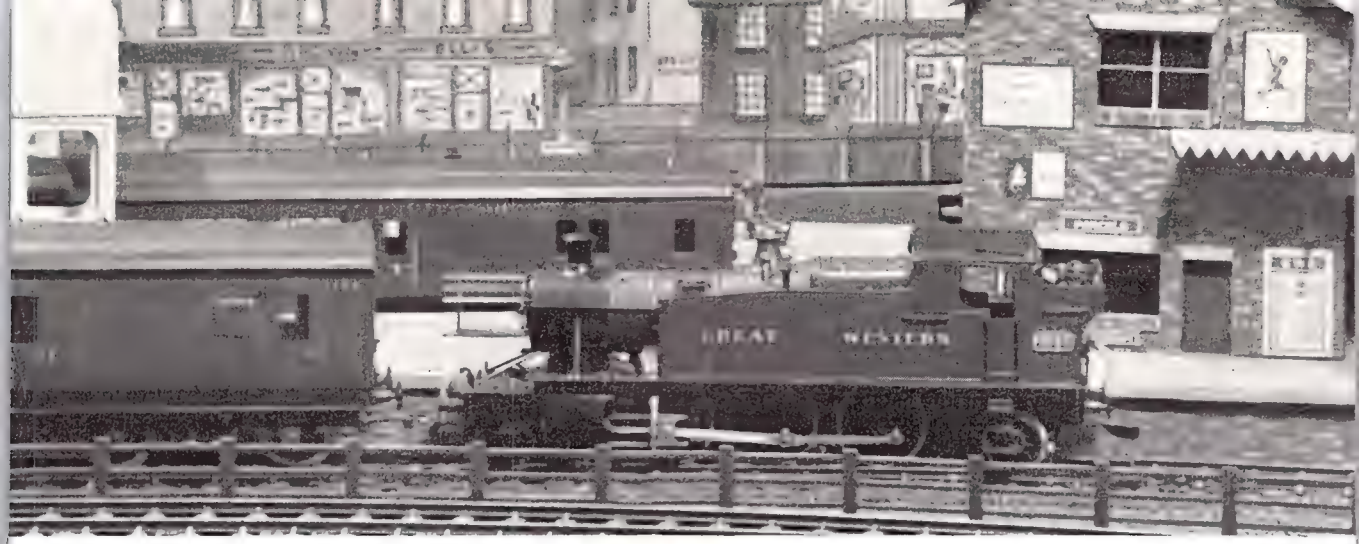


Above : the 4300 class Mogul.
Below : the village of Clyton-on-the-Hill.
Top facing page : small Prairie pulls out of Exeter West.
Left centre : goods yard at Plymouth Harbour.
"Ariel" shunting.
Right centre : the overbridge behind Mounts Bay. Saint class 4-6-0 on train.
Below : Mogul ascending Clyton Bank. Note home-made all-metal wagons.

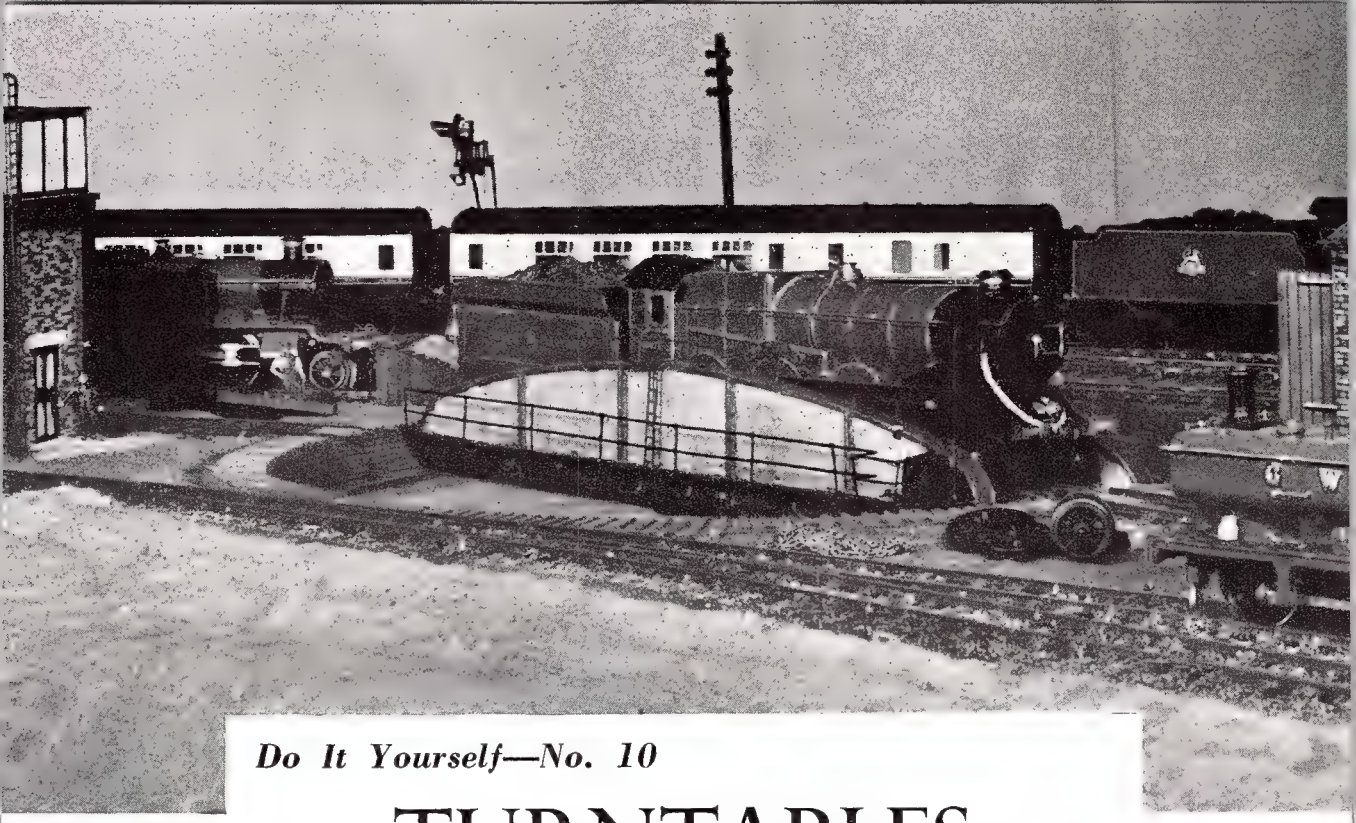
It will be seen that L.M.S. coaching stock has now intruded into the West Country in the shape of a through train from Birmingham. This is, of course, a great convenience to Midlanders, but I am afraid the real excuse lies in the fact that I am anxious to add a "Patriot" to the loco stud once I can get down to building it, while I also have designs on a Midland compound at some distant date.

I should perhaps mention that the background scenery has been partly formed from Bassett-Lowke's sheets mounted on hardboard with photographic dry mounting tissue, while behind Exeter is a backcloth made up from Skinley OscenO sheets. They too are used in an amended form. The rural portions were attached to hardboard, forming a backcloth, while the townships were also mounted on hardboard, but thereafter fretted out and placed in position about one inch in front of the back-scene, thus giving an effect of relief. Both sets of scenery were hand painted, using artist's oils, which give a greater depth of image than water-colours, and are far easier to blend unless one happens to be an artist.

The photographs were taken with a Rolleiflex camera, fitted with an f3.5 Tessar lens. All were at f22, and the relative time exposure depended on the lighting employed—with photofloods as low as six seconds, and in ordinary lighting perhaps up to thirty-two seconds. I used Selochrome film developed in Johnson's "Unitol" and I find that a twenty-five per cent increase in development time over the suggested time gives an excellent negative for enlarging, the prints being developed in Johnson's "Contrast" developer diluted 3 to 1 for maximum contrast.


GREAT WESTERN

G W
SUTTO
FRANK JACKMAN
PA
W. TICK



Do It Yourself—No. 10

TURNTABLES

POWER OPERATED

by Lt.-Col. F. G. McCaughey

IN describing the motorized turntable which has been in use on my "OO" gauge layout for the last three years, I will confine myself to a general description with sketches, and will give only a few dimensions, as these in general depend entirely on such factors as the diameter and depth of well and the height of the driving pulley above the base of the motor. However, it will be seen from Figs. 1, 2 and 3 that the model is perfectly simple in design and operation.

The chief "ingredients" are a circular wooden tray, a second-hand front cycle hub complete, an electric motor, a wooden doorhandle, a few spare pieces of wood, a length of cord, a piece of string and some small rollers.

The Turntable Well

I was fortunate to find this discarded circular wood tray, inside diameter 12in. and inside depth ½in., which saved me quite a lot of work. Having decided the exact location of the turntable, a circular hole was cut in the baseboard to take the tray and fit it tightly. Battens (Fig. 1 F) were then screwed to the underside of the baseboard to support the tray at the correct height, i.e. the upper edge of the tray level with the baseboard. The tray was then removed and a hole cut dead centre to take the cone and lower locking nut of the cycle hub (Fig. 2 C), and the hub was secured to the underside with small screws through some of the spoke holes, making sure that the axle was in the exact centre (Fig. 1 G). From now on the "tray" will be referred to as the "well" and the bottom of the tray (inside) as the "bed."

The Main Pulley

This was made from three circles of ⅛in. hardboard—two cirlces with diameter 8½in. and one with 8in. diameter. Small holes were drilled through the centre of each circle and a nail was inserted to keep them in position—the larger circles on the outside to form flanges. They were then glued together and when the glue set were further secured by drilling and driving track pins through them. The centre hole was then enlarged sufficiently to fit tightly on the other end of the axle and finally secured with locking nuts (Fig. 1 N). The well, hub and pulley (Fig. 1 E, G, O) were then placed in position on the baseboard and fastened by screws through the bed to the battens below the baseboard (Fig. 1 F).

The Motor

This was described in the ex-government stores list as a "gyro angling unit," and was seemingly part of the mechanism of a torpedo (Fig. 1 J). It was rated as 24 volts D.C., but has worked very well on the 12-volt D.C. power supply. The main shaft turned only

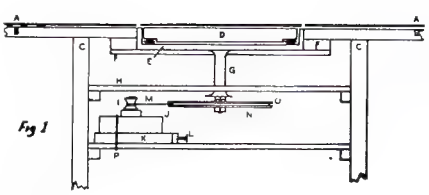


Fig 1

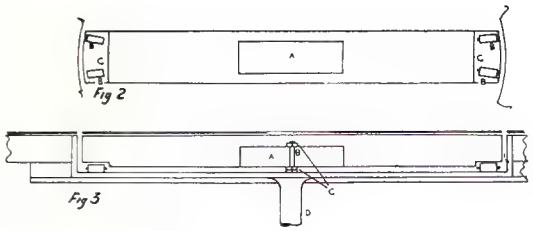


Fig 2

Fig 3

in a clockwise direction and made about nine and a half revolutions per minute. A major operation was performed by Mr. Wm. Price, in which a number of useless parts such as cams, etc., were removed and discarded and the motor was rewired so that it could be reversed through a D.P.D.T. switch. It is operated direct from the 12-volt D.C. power unit through a press-button switch on the control panel. The top of the main shaft has a flat metal platform of about 1½in. diameter, which was drilled and tapped and an old wooden door handle screwed to it. This has proved to be an excellent driving pulley (Fig. 1 I).

The Framework

This does not need any very full description, as the complete structure is shown in the sketch (Fig. 1). It is, however, essential that the driving pulley (I) and the main pulley (O) are exactly level so that the cord (M) will have a straight pull. The crossbar (H) was U-slotted to fit the hub (G) in order to counteract the pull of the cord and keep the hub at right angles to the well bed (E). The motor itself (J) was placed on its base (R) between two wooden guides (K) to keep it in alignment. A third piece of wood was secured across the guides in front of the motor with a long wood screw (L) through it, its point blunted to press against the base of the motor and so allow the cord to be adjusted by slackening or tightening as required. The motor was fastened to its base simply by a piece of string (P) tied behind the main shaft and under the base.

The Table

As the diameter of the well and depth of the wall to the bed were 12in. and ½in. respectively, a piece of wood was cut to the dimensions 11⅞in. x 2½in. x 1in. to form the table itself (Fig. 1 D). The exact centre was marked and a rectangle 2in. x 1½in. drawn. This rectangle was cut out on a fretsaw machine with a coarse blade to ensure straight cutting and the corners were squared (Fig. 2 A). Each end of the table was cut in an arc to run parallel to the well wall and as close to it as possible (Fig. 2). Recesses (Fig. 2 C) were then cut on the underside to take small rollers (Fig. 2 B)—salvaged from ex-government electric contacts—so that the base of the table was clear of the bed by about ⅛in. These rollers were so fixed that each one was at right angles to the edge of the table and so ran easily in a circle. Another block of wood (Fig. 3 A) was then cut to fit exactly into the rectangular hole in the table (Fig. 2 A) so that the latter could slide up and down easily while side and end play was cut to a minimum. The exact centre of this block was marked and a hole cut in it to fit fairly tightly on the axle protruding above the well bed (Fig. 3 B) and it was then secured by locking nuts (Fig. 3 C). The table was now placed in position over the centre block on the well bed and the height of the baseboard clearly marked on each end. A friendly joiner then cut the table along this line on his power saw, which ensured a straight and even surface for the track level with the baseboard. It was for this reason that the original table was cut 1in. in depth. This is, I think, the most important part of the whole structure, since it ensures that the weight of the table and loco is borne by the rollers on the wall bed and NOT by the axle, and provided the bed is level it will give easy and trouble-free movement.

Driving Cord

After trying out various kinds of cord—rubber and plastic bands were ruled out owing to their elasticity—I found the best results were obtained from Meccano cord (usual disclaimer), as it does not stretch. This was lapped once round the main pulley and twice round the driving pulley (Fig. 1 M) and the tension adjusted by the screw (Fig. 1 L). The "grip" of the cord is improved if it is rubbed with resin.

Track

A piece of made-up track was laid on the table so that each rail was equidistant from the centre line, glued and further secured by driving track pins through the centre of each end sleeper and those nearest the centre hole. The rails were cut allowing not less than ¼in. beyond the edge of the table at each end, and further checked by measuring each rail from the centre of the axle to make sure that each was exactly the same length.

Finish

The well bed and wall were painted matt black, leaving a circular track unpainted for the rollers. Cardboard "girders" were glued to each side of the table and painted red oxide. The surface of the table was raised to top-of-track level with lengths of cardboard scribed to represent planks, painted matt black and glued to the sleepers on the outside of each rail, and between them, and lastly, hand-rails were fitted on each side.

To get the best results the following points should be noted:

1. Exact centre means "*exact centre.*"
2. The two pulleys are in alignment so that the cord is not fouled by the flanges on the main pulley.

3. The tension of the cord is correct, giving a steady non-slip pull.
4. The hub and axle are not distorted, the ball race is greased, and the cones are properly adjusted so that the axle turns freely on its bearings.
5. The well bed is smooth, completely level and kept clean.
6. The table fits easily on the centre block, allowing up-and-down movement only and rests squarely on the rollers.
7. All locking nuts and screws are tight.

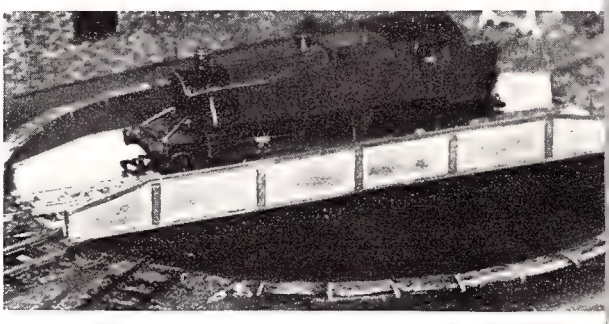
The total cost of the model was just under 10s.: motor 7s. 6d., second-hand cycle hub complete 1s., Meccano cord 3d., rollers about 1s. The rest, pieces of wood, hardboard, track, wire, came from spares lying about my workshop.

It may be of interest to note that, as already mentioned, the speed of the motor main shaft is about nine and a half revolutions per minute, circumference of driving pulley about 2¾in., circumference of main pulley about 24in, and ultimate speed of turntable one complete revolution in one minute twenty seconds irrespective of load. To get this result my mathematical calculations were of the crudest but were satisfactory.

I have not yet seen, nor have I been able to evolve, a "simple" method of locking the table in position, but with this particular table I have never found the necessity because, owing to its slow speed, lack of side play and the fact that I can see the lead-in tracks from the control panel, it is possible by cutting out the motor through the push-button to align the tracks correctly.

HAND OPERATED

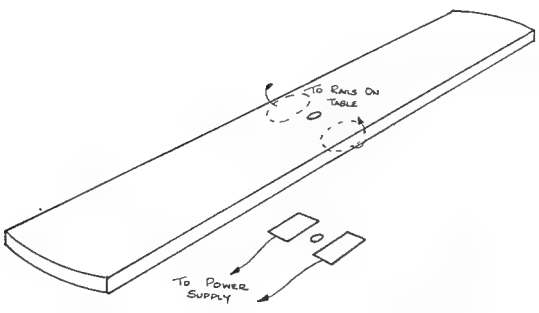
by R. Stone



THIS hand-turned table is entirely a free-lance effort made from materials available at the time of building, primary consideration being given to a fairly robust job, with electrical contacts not dependent on connections at the rail tips when lined up with either road leading to it.

The base was cut from $\frac{1}{16}$in. red fibre-board and a circle was marked upon it ten inches in diameter. The centre two-inch-wide portion was then cut through with a fretsaw; a similar operation on the slightly curved ends then produced a base eleven inches long by two inches wide, with a mark left by the compass point dead central for boring a hole to carry a 10 B.A., nut and bolt for subsequent fitting to the baseboard. Four round-headed brass upholstery studs (the domed variety so generously used on the old-fashioned, but so comfortable, hide armchairs) were inserted one in each corner, in order to facilitate easy turning, the shanks being nipped off after insertion and riveted over with a light hammer.

A length of track with the sleepers cut away, leaving just the chairs, was glued and pinned in position with an overhang of $\frac{1}{8}$in. at each end. Finally, the sides were cut from $\frac{1}{8}$in. hardboard, $\frac{3}{4}$in. high, dropping at the ends to $\frac{1}{4}$in., the girder effect being obtained by overlaying with strips of card. The whole was finished off in grey paint, and smeared liberally with a sooty rag.



To carry the current from the leading rails to the table centre two small brass plates were let into the baseboard, one on each side of the bolt hole drilled to receive the previously mentioned 10 B.A. nut and bolt. A length of wire previously soldered to the underneath of each small plate was carried to the main approach road and each one soldered to its appropriate rail. Jumper wires carried the current from that point to the road leading to the coaling stage, and naturally all the wiring ran underneath the baseboard, emerging at the respective soldering points through small holes drilled against the rails. The following diagram will make this perfectly clear.

Contact with the table rails and the two brass plates was made by drilling a small hole on each side of the rails dead opposite the already existing bolt hole, and two upholstery studs were inserted from underneath with enough of the shank left on to solder to the rail.

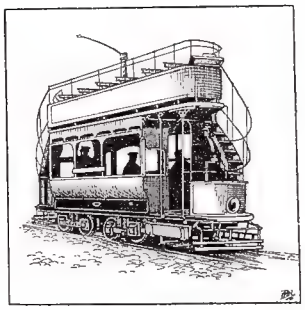
Electrical performance has been 100 per cent, and the domed tops of the six studs provide very easy and smooth turning. Naturally, the approach roads and safety spurs with buffers had to be raised to the necessary height, approximately $\frac{3}{16}$in.

The "well wall" was easily obtained by cutting a strip of balsa into short pieces and gluing down in a circle a shade larger than the diameter of the table.

TRAMWAY MODELLING

in 4mm. Scale

by P. D. Hancock



Part 2—Track

THE actual operation of model tramcars can be managed in a number of different ways, and several modellers in the past have described "cable-car" systems, whereby the trams are drawn along by means of a cable passing around pulleys and below a slot in the roadway (Fig. 4). This system is quite all right for simple layouts, but it poses some problems at junctions and crossings, and a complicated series of underground cables can lead to a delightful series of mishaps. Nevertheless, a cable system would be quite a fascinating thing to model, and it may be noted that the cable car is not altogether a thing of the past, since San Francisco still sticks to this system in spite of all the efforts of would-be reformers to modernize the city's street transport. However, the outstanding example of a complicated cable-car system is that which was installed in Edinburgh at the end of the last century, and which lasted there until 1922. The modeller who intends to go in for cable tramways would do well, therefore, to have as good a "look" at the Edinburgh system as the meagre records allow, and in this connection mention might be made of a recent article by Mr. J. G. L. Hunter in the University of Leicester's *Journal of Transport History*.

Most people, however, will look upon electricity as the obvious method of operating a tramway system, and here the choice can be made from the electric conduit, electrified studs and electrified overhead. From the modelling point of view we can equate the conduit system with centre third rail, and the modeller can choose for himself whether or not he really wants to sink his third rail underground. The stud system of current collection is, pretty obviously, much the same as for railways, and it is only when we come to consider the overhead system that we really come to anything new.

It would, of course, be perfectly feasible to run a model tramway on the two-rail system of current collection and to install a dummy overhead, or a dummy conduit, or even a row of dummy studs! As a matter of fact, there is something to be said for "two-railing" model tramcars even if you do intend to operate from an overhead, since cars can then be run round to test your track before the actual overhead is installed, and the change-over in the method of current collection can easily be effected by means of a small switch on the tramcar body. On the other hand, the two-rail system means insulated track, and one of the normal advantages of model tramway track is that it can be soldered up solid, and all sorts of complicated pointwork can be attempted without any need to bother about insulating gaps or jumper wires.

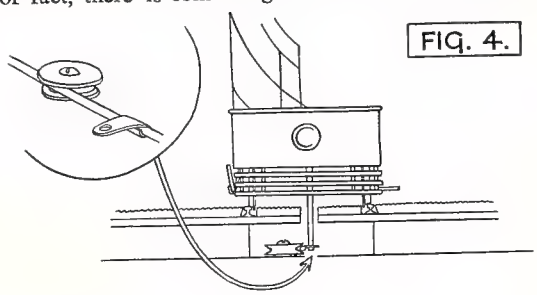


FIG. 4.

Of course, tramway track has other great advantages from the point of view of the modelmaker. Not the least of these is the fact that track can be curved to ridiculously small radii. On my own layout there is one curve of five-inch radius, and a little experimenting has shown that a Romford motor bogie will grind its way quite comfortably round a three-inch-radius curve. Did I say quite comfortably? Well, anyway, it gets round! Then again a model tramway layout can make do with a surprisingly small number of fully operative points. Most pointwork can be "sprung" so as to offer pre-selected routes to tramcars coming in opposite directions.

This spring can be accomplished in one of two ways. The best way is to build up one's pointwork à la prototype, with only one moving point blade (Fig. 5). A light spring normally keeps the blade

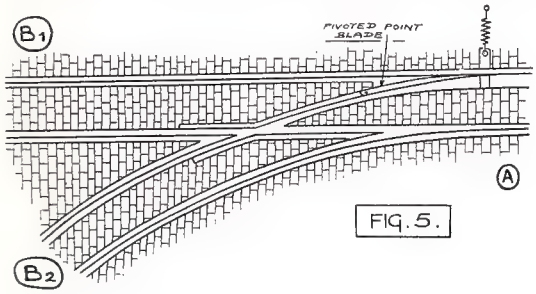


FIG. 5.

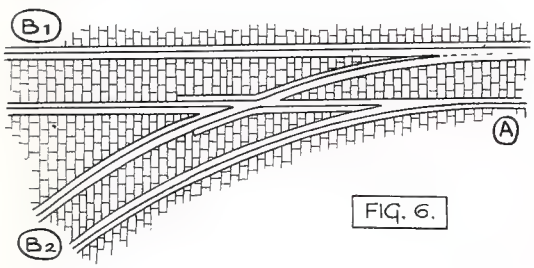
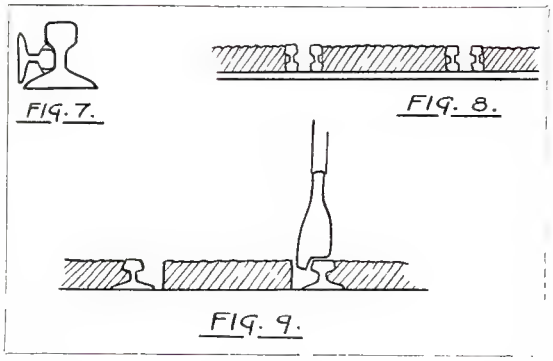
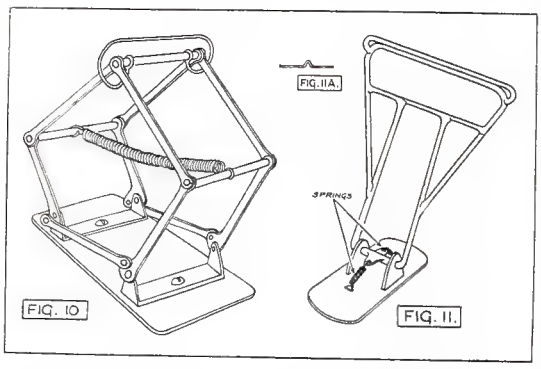


FIG. 6.





pressed against the stock rail, and tramcars coming from A to B2 thus automatically take the branch line, while tramcars coming along the main line from B1 to A simply push open the point blade as they pass. Thus a return loop can be arranged quite easily and will need no attention at all, trams always entering the loop by one road and leaving by the other.

The alternative method of "springing" pointwork is to dispense with moving blades altogether and to build points as indicated in Fig. 6. The flangeways where the point blades would normally be are then filled up with soft solder or plastic wood, and then opened out again with the aid of a fine file—but only so far! The "preferred" route from A to B (that is the route which tramcars are normally to take) is opened out to its full depth, but the other route is opened out only partially. Thus if the normal route is to be from A via the branch line, then the curved flangeway is opened out fully and the other, being higher, forces the wheels of a vehicle into the curve. Tramcars coming from B1 to A just bump over the raised flangeway. This may sound rather alarming, but in actual fact only a very small difference in depth is needed between the two flangeways, and the bumping of trams over the raised flangeways is barely noticeable. Anyhow, there is no objection to a little jolting and swaying, since this all helps to give the true tramway atmosphere. In this connection, indeed, it may be worth noting that trackwork does not need to be anything like as perfect as for main-line railway work. The trams, after all, are only required to pull themselves—or, at the most, one or two trailers—and they can safely be permitted to switchback up and down hill in a manner which would never be tolerated on any respectable railway of the orthodox kind!

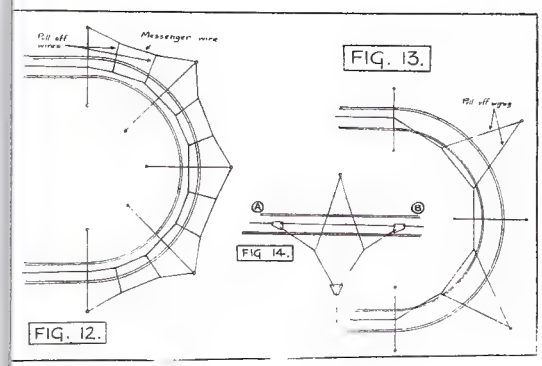
Now a word about the actual rail employed for tramway work. Most people, I imagine, will be quite content to lay track with ordinary rail—but making do with fewer sleepers than usual. The roadway can then be built up on either side of the track and between the rails—either by means of cardboard overlays or else by means of some plaster mix. This method can look quite realistic and the absence of inner flanges on the rails is almost unnoticeable. However, anyone who wishes to go to the trouble could, no doubt, devise a more prototypical form of rail, and Mr. Macmillan, working in 7mm. scale, uses Rocket Precision flat-bottom and conductor rail soldered together as in Fig 7. Another very effective method of laying tramway track—albeit somewhat extravagant—is to install a continuous check rail and to build up the track on a metal base along the lines indicated in Fig. 8.

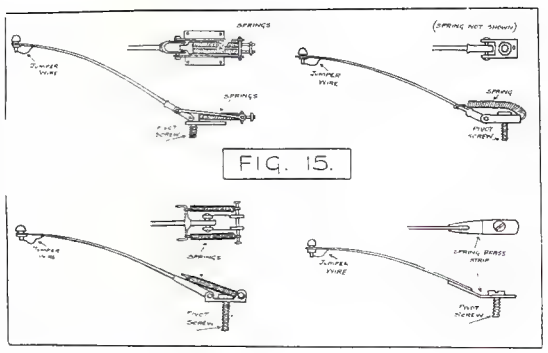
One important point which arises with tramway track is the difficulty of devising some easy method of cleaning rails which are fully inset into a road surface! Sandpaper and carbon tetrachloride are equally awkward to use and may damage the road, so that some form of scraper would appear to be indicated. This can take the form of an old screwdriver filed to the shape shown in Fig. 9, and this is used to scrape the rails clean. Perhaps the easiest way out of the difficulty, however, is simply to avoid having fully inset track! If the rails are allowed to project just a fraction above the road surface this will enable a sandpaper block or a Peco rail cleaner to be used with perfect safety, and the slight loss in appearance is well compensated for by the increased ease of maintenance.

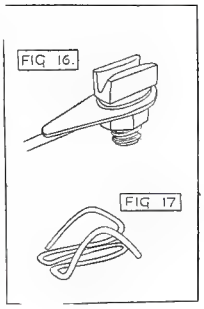
Part 3—Collectors

IF one is modelling an overhead-operated tramway, the exact method of current collection becomes all-important. There are three main types of collectors normally employed on tramcars; these are the pantograph, the bow collector, and the trolley. Whichever form of collector is adopted, however, there will, of necessity, be only one very small contact with the overhead wire, and this contact must be as efficient as possible. A collector, therefore, must make a good firm contact with the wire, and yet it must not exert too much pressure, since this will only add to the friction and push the wire up. On the other hand, the collector must be capable of a fair amount of up-and-down play, since it may have to be depressed at points where the tramway track passes under bridges. These conditions mean, almost inevitably, that some form of springing will have to be fitted to the collector. This is provided automatically in the case of a pantograph (Fig. 10), but it is difficult to arrange matters so that the springing is weak enough to allow easy depression of the collector bar and yet strong enough to keep the pantograph fully raised under normal working conditions. The pantograph, in short, has a limited rise and fall, and one's overhead has to be constructed within the limits of this rise and fall. It also has to be constructed within the limits of the pantograph's "sideways" movement, and this is determined simply by the length of the collector bar, which means that the overhead has to be suspended as nearly as possible over the centre of the track, and has to be carried round curves in a series of short jerks (Fig. 12). As against all these "disadvantages," however, the pantograph has the one very great virtue that it raises no difficulties whatsoever when it comes to reversing.

The bow collector (Fig. 11) is, in many ways, a cross between the pantograph and the trolley pole. It suffers under the same disadvantage as the pantograph in that it does not easily accommodate itself to sharp curves, but it can, on the other hand, be arranged to give a good rise and fall, and reversing is fairly simple. In theory, indeed, the bow collector







can be arranged simply to " flip over " when the tram reverses its direction of travel, but in actual model practice this may need to be aided by the provision of small reversing notches at selected points in the overhead (Fig. 11a). These catch the collector as it is pushed towards them and reversing follows automatically.

The trolley pole is undoubtedly the most flexible of all the possible forms of collector. It can be depressed almost to the roof of the tram or it can be swung out at right angles to the tram without affecting its efficiency in any way. In sharp contrast to the conditions imposed by the pantograph, one's overhead can be carried round a curve in a mere two or three stages (Fig. 13) or can be offset quite a way from the centre of the track. That these are very real advantages indeed will be appreciated as soon as one starts to erect one's overhead, and one might say at first glance that the trolley pole is the collector par excellence. It has two very great drawbacks, however. It needs proper frogs to be installed in the overhead, and it requires special arrangements for automatic reversing. One can, of course, pull down the trolley pole and swing it round by hand, or else one can design one's tramway layout in such a way that there is always a turning circle at the end of the route. If, however, one just cannot get round the need to reverse the trolley pole, the only really satisfactory answer is to install a reversing wye in the overhead. This, as can be seen from Fig. 14, involves three frogs in the overhead. These can quite well be the " pan " type described a little farther on, and they have to be " biased " so that a trolley pole being pushed from B to A will automatically take the curve of the wye. This " biasing " is easily effected by tilting the frog downwards on the side of the wye so that the trolley shoe automatically slides to the required side and takes the correct wire. Thus, as a tram proceeds from A to B, the trolley pole swings up one leg of the wye and is pulled down the other as the tram continues on its way—a most satisfactory performance altogether just as long as you can get it to work !

Another way out of the reversing difficulty is to have two trolley poles on one's tramcars, something after the style of the London " Feltham " type cars or some of the American inter-urban vehicles. At the end of each route one then has to fit up some sort of contraption to pull down one pole and raise the other, and this can take the form of a couple of bars which can be raised or lowered by remote control from the side of the track. In many respects, however, this can raise more difficulties than the reversing wye, and the two-trolley-pole system is not, in any event, really typical of practice in this country.

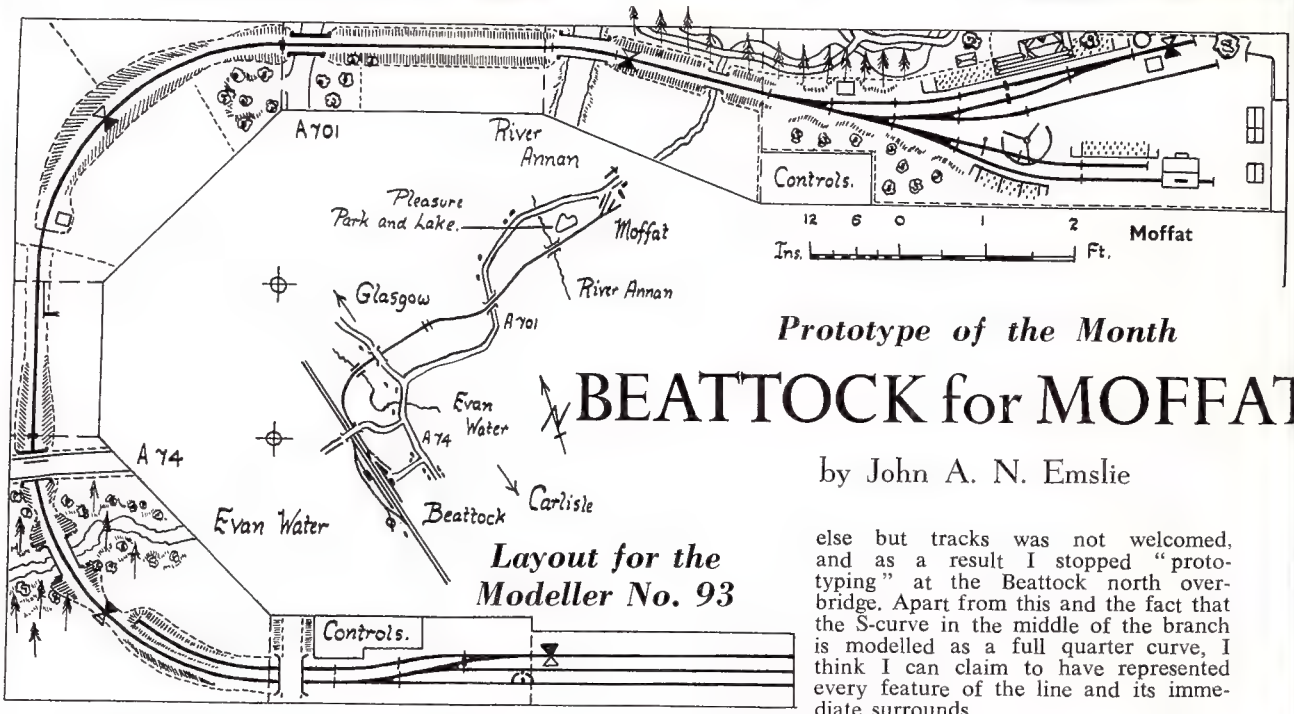
Trolley poles themselves can be made in quite a number of different ways, and a variety of designs is shown in Fig. 15. The springing should, if anything, be on the weak rather than the strong side—but the individual modeller will soon discover the best strength of springing to suit his own layout. The actual contact head could be a revolving wheel if the modeller so desires, but this form of collector is not really too efficient, and has, I believe, been superseded on most tramway systems by some form of sliding shoe. The easiest method of making such a shoe is simply to mount a brass bolt on the end of the trolley, deepen the groove, and file the sides flat (Fig. 16). Brass, however, is not so good from the point of view of current collection, and a better arrangement would be to bend a shoe out of a small piece of copper or silver sheet, and solder this to the top of the bolt.

Actually, the best contact shoe of all would appear to be one made of platinum—not because platinum is such an especially good conductor of electricity* but because it does not oxidize upon sparking. It thus keeps clean far longer than a collector made of any other material and gives a delightfully positive and almost unfailing pick up. The one drawback to the idea of using platinum, however, is its appalling cost ! However, one can obtain 32-gauge platinum wire for 1/- an inch, and a pretty efficient collector shoe can be made out of about an inch of wire bent as shown in Fig. 17. In the case of pantographs it is an even simpler matter of using platinum wire for the collector bar, and its use here is, therefore, strongly recommended. Even if the modeller feels that platinum is beyond him, it would be well worth his while to experiment with silver rather than copper contact shoes, since, even if the silver does oxidize, the silver oxide will carry electricity far better than copper oxide.

Incidentally, the contact shoes should always be rounded and flared out slightly at the ends so that they can slide easily under or round the edges of frogs and other such impedimenta in the overhead. It ought to be possible, indeed, to push a well-shaped shoe backwards along one's overhead—though this, of course, is not a practice to be recommended for regular service !

* It is not, theoretically, as good as silver or copper—but then theories are not everything!

(To be concluded)



Layout for the Modeller No. 93

Prototype of the Month

BEATTOCK for MOFFAT

by John A. N. Emslie

NO longer is the traveller greeted with this call as his train draws into Beattock station. Nor can he see, standing in the bay at the north end of the up platform, the Caley 0-4-4 tank push-pull coach which once would have conveyed him on the brisk downhill run of five minutes' duration to the pleasant town of Moffat, some two miles distant to the east. For on December 4, 1954, the little train rumbled up to the junction for the last time, and as it drew to a halt in the darkened station the wheel of progress moved forward yet another turn. As has happened in so many rural areas, the road had come back into its own. When the Caledonian Railway opened its main line in 1847, Moffat hoteliers ran coaches to and from Beattock station until, on April 2, 1883, the Moffat Railway Company opened the branch line and the road coaches became little more than taxis serving the town of Moffat itself. From the start, the "Caley" worked the line on a lease, but later the branch company was incorporated in the larger concern. Now motor buses again take up the role abandoned by those horse coaches some seventy-one years ago, much to the regret of the local inhabitants and of all who knew the branch.

The whole layout is extremely simple and would form an excellent yet inexpensive "scale" line. Construction on the open framework principle is recommended and should cause no trouble. In designing the layout I made provision for sectioning the baseboards for ease of transport or portability. Care should be taken to fix the rail ends firmly at each baseboard break, but fortunately all breaks but one are at 90° to the line of rail. All points and curves are of 36in. radius except the two with centres marked, which are of 33in. radius. Large stock could be handled by such curves, but on the prototype such items would look out of place. Excellent scope for scenic work is given, especially in the region of the Evan Water, where judicious afforestation could provide a delightful setting with the minimum of expense. The layout at Moffat follows the prototype exactly, but, though the bay at Beattock and various sidings associated with it could have been modelled, the prospect of providing some nine feet of painted back-scene depicting little else but tracks was not welcomed, and as a result I stopped "prototyping" at the Beattock north overbridge. Apart from this and the fact that the S-curve in the middle of the branch is modelled as a full quarter curve, I think I can claim to have represented every feature of the line and its immediate surrounds.

The appended illustrations will give a good idea of the branch, but some supplementary details will be of use. The unique architecture and delightful setting of the station are shown in the photographs. The main buildings are built of wood—vertical planks—with slate roofs. The shimney stacks, building foundations and platform and loading bank faces are of grey stone. The platform area is paved beneath the glazed canopies and elsewhere is ash-filled. The platform canopy is supported on stout wooden posts, but its companion on the road frontage has more slender cast-iron supports. The finish is in dark and light chocolate brown and cream; the nameboard has white letters on a blue ground. The smaller platform building, by the way, is the gents' lavatory. Another photo shows the wooden goods shed, which has a recessed bay for loading road vehicles from the internal goods platform.

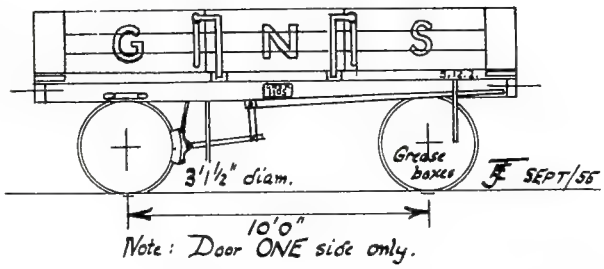
The line leaves the terminus and skirts the local pleasure park before crossing the river Annan by a railed plate girder bridge. The branch train as seen from the boating lake is shown in the seventh view, which also illustrates the type of tree—Scots fir—seen in the locality. A low embankment on a slight grade carries the line up to cross the Beattock road by a further girder bridge, beside which a small halt could be provided. A steep curving rise through a cutting brings the line to higher ground within sight of Beattock. A further descent to pass under the main road by a stone arch bridge precedes the crossing of the valley of the Evan Water by another arch bridge. A sharp ascent follows to bring the line up beside Beattock up refuge siding, and ultimately to its termination in the bay at Beattock station.

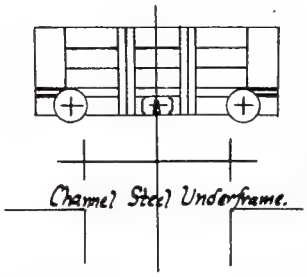
That then is the Moffat branch, and the final view is of the L.M.S. push-pull coach used to work the line with a Caley 0-4-4 tank. Prior to closure there were eleven journeys each way (extra on Saturday) daily, except Sunday, of which one was a mixed train turn. It was with regret that I witnessed the closure, but possibly the foregoing description has been of sufficient interest to some readers to launch them forth on modelling the branch, which may yet flourish—if only in miniature--under the care of the enthusiast.

Reading downwards from left to right: branch push - pull Caley 0-4-4T 55237 as seen from boating lake, approaching Moffat; Moffat yard; exterior Moffat station; wood goods shed; weighbridge and goods offices; view of Moffat station buildings and Beattock train looking north from the yard

GREAT NORTH OF SCOTLAND RAILWAY
OPEN WAGONS

Drawings by J. A. N. Emslie. Scale 4mm.=1′ 0″.

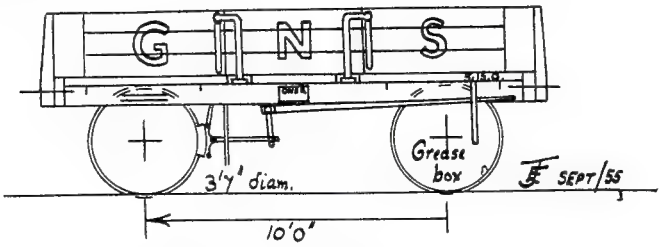


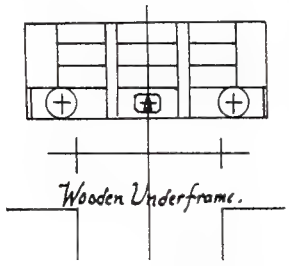


10T. THREE-PLANK OPEN

Tare 5.12.2

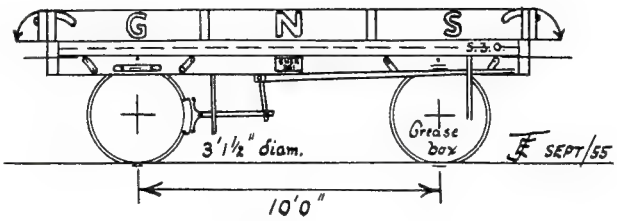
Nos. 263, 512, 541, 562, 620, 669, 710, 1083, 1105, 1236, 1291, 1355, 1627, 1717, 2142, 2315, 2627, 2883, 3262, 3300 et alia.

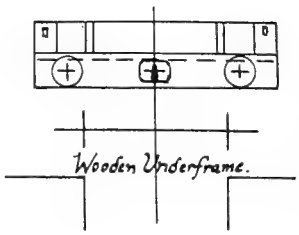




8T. THREE-PLANK OPEN

Tare 5.15.0

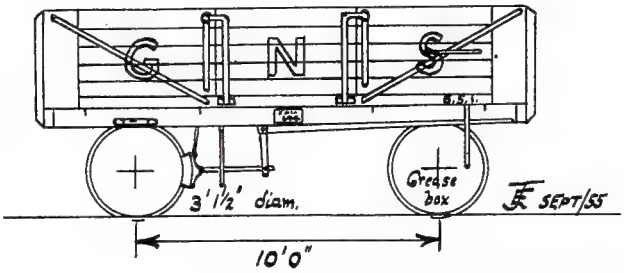


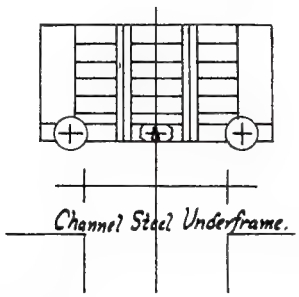


8T. LOW-SIDED WAGON

Tare 5.3.0

Nos. 351—500.

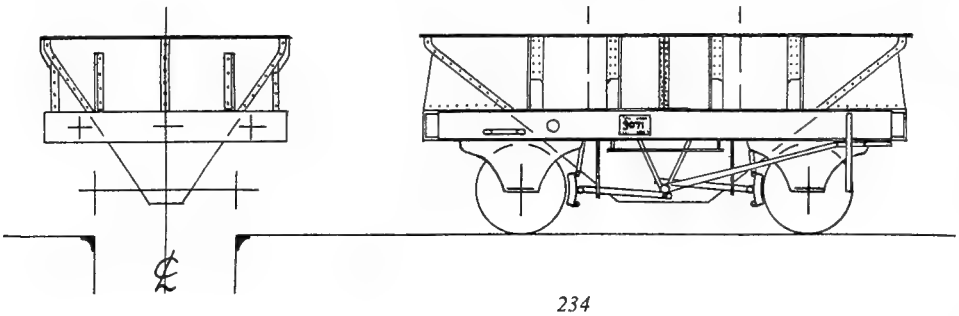




10T. SIX-PLANK OPEN

Tare 6.5.1

Nos. 13, 64, 100, 139, 272, 525, 674, 716, 760, 1222, 1356, 1584, 1614, 1773, 1807, 1906, 2137, 2206, 2484, 2515, 2712, 2851, 3449 et alia.



12T. STEEL HOPPER BALLAST WAGON

Tare 6.2.2. Channel steel underframe, five-leaf springs, grease boxes.

Nos. 3053—3092.

LEEDS MODEL RAILWAY SOCIETY'S EXHIBITION, 1956

Corn Exchange, Leeds

Thursday, October 25, 2 p.m.—9 p.m.
Friday, October 26, 10 a.m.—9 p.m.
Saturday, October 27, 10 a.m.—9 p.m.

THE accompanying illustrations show portions of the three main exhibits that will be seen at this fine exhibition, the club's "O," "OO" and "TT" gauge layouts. Considerable work has been done on these since their last public showing, and it is hoped to demonstrate fully the complete reliability of these three gauges throughout the exhibition.

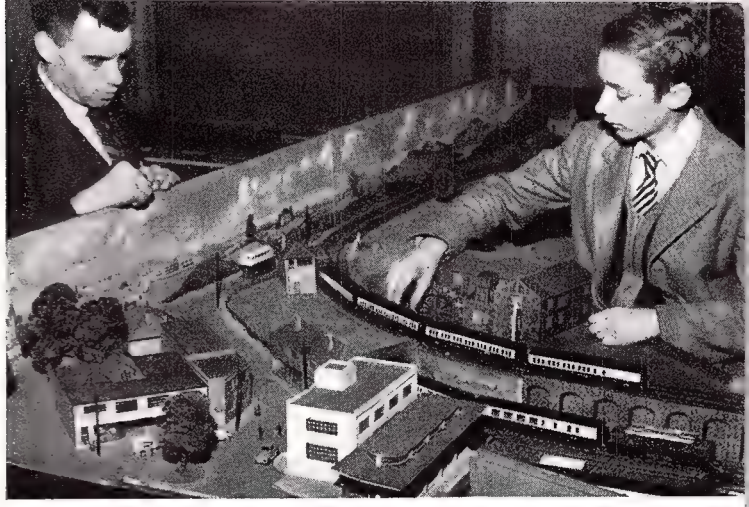
There will be the usual static stands showing all phases of our hobby from locomotives to lineside effects. Besides the three club layouts, the club will be showing the junior section's main line of single track with a three-track station which serves as a junction to the high-level country station. The biggest part of this work has been done by the under-18s with a minimum of adult help, and this will surely show would-be modellers what can be done easily and cheaply as compared with the other layouts on view.

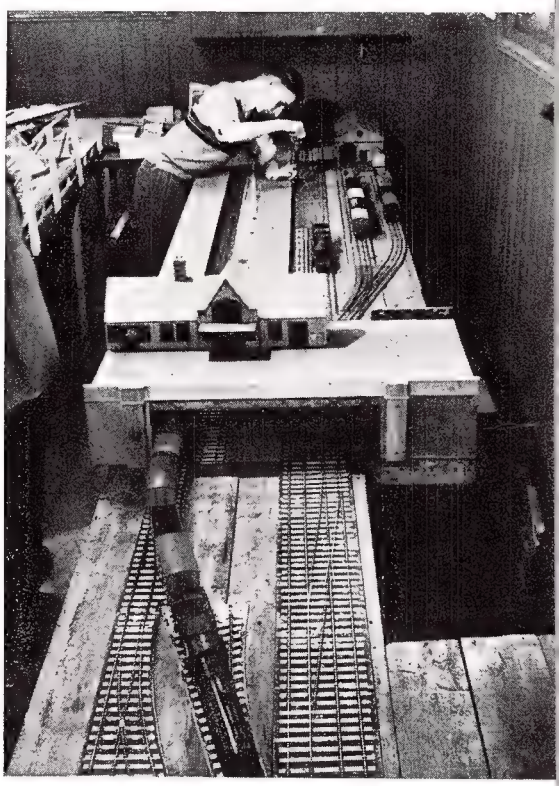
Messrs. G. B. and S. Tate have also consented to show once again their "O" gauge layout, which is based on pre-1923 North Eastern Railway practice. Alongside and in conjunction with this will be Mr. S. Tate's goods yard and sidings, where it will be possible not only to demonstrate automatic shunting and marshalling, but both two-rail and three-rail locomotives will be running on this, as the main layout is three-rail, but the yard has been adapted for both systems.

The Narrow Gauge Railway Society will be present once again, showing its models and a small layout. Many other clubs have promised support with static models, and as well as this the Silverdale Club hopes to be bringing an "EM" gauge layout built by two of its members.

There will be numerous trade stands, including Hornby, Trix and Tri-ang layouts, so for the operational fiend there will be plenty to see, and they will also be showing all other aspects of the hobby. Most of the local stockists will be represented, together with the others from farther afield.

Besides the usual awards to the club members, a cup for the junior section for the best model produced by them has been introduced. There will also be an award of £5 5s. for the best model in any class from non-members of the society. Models, whether for competition or exhibition only, will be welcome from clubs or individuals. For further details of this and entry forms, please contact Mr. N. Dodsworth, 80 Langley Road, Bramley, Leeds, 13.

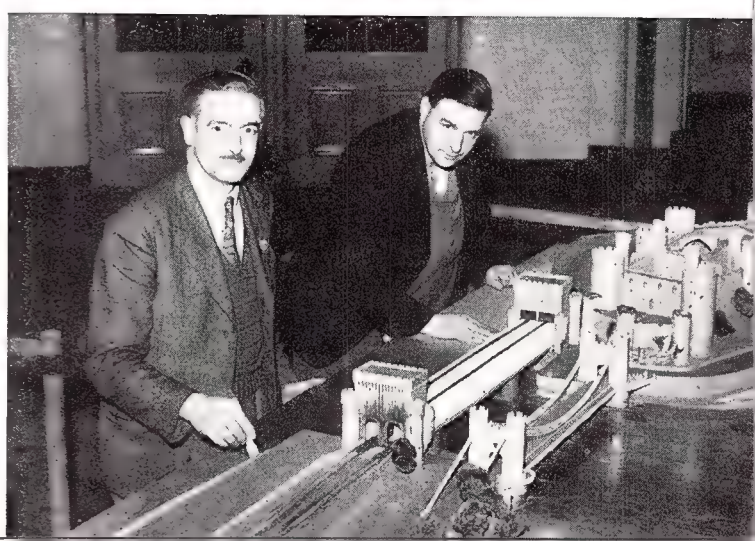




Finishing touches being made to the club's "OO" gauge layout. As will be seen, the scenic picture has not been neglected (photo courtesy "Yorkshire Post").

Work in progress on the "O" gauge layout in the society's workshops.

A portion of the "TT" gauge layout, showing the scale models of Conway Castle and bridges. The layout also includes a model of Deganwy station (photo courtesy "Yorkshire Post").



JUNIOR MODELLER

ADD AN ELEVATOR CONVEYOR

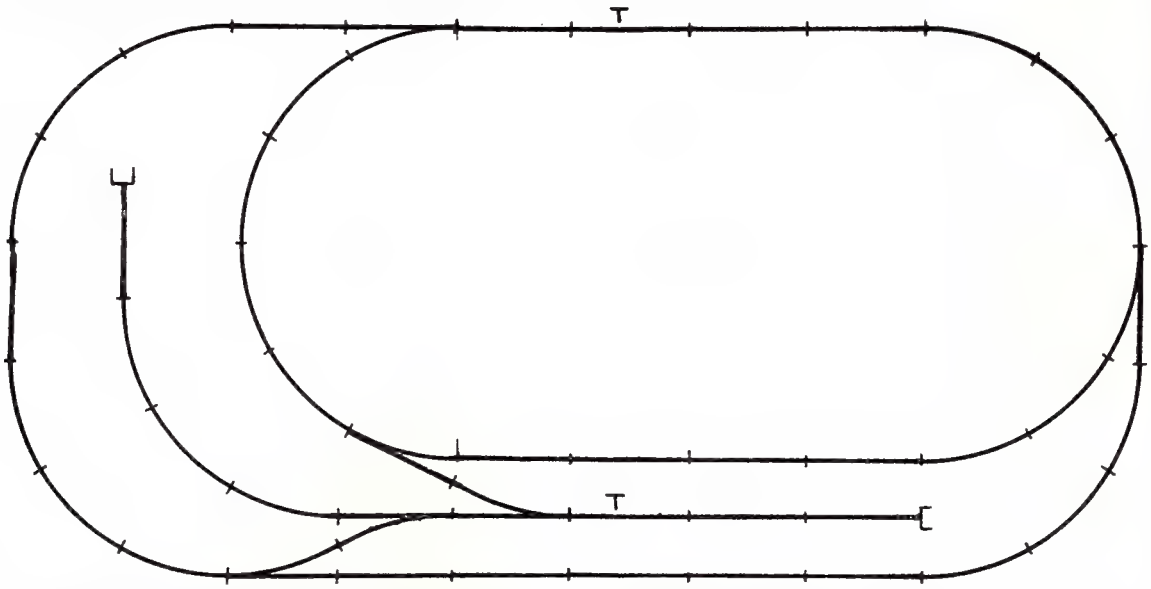
IF you want to add something novel to your layout, why not include a Trix elevator conveyor and its associated remotely controlled dumper wagon? This realistic action model enables you to unload the special hopper wagon on one side of the layout and to carry the coal over any intervening sidings to waiting wagons on another road. It only needs a little imagination to see how many other uses this attractive model can be put to.

For example, why not use it to load a model ship in your dock basin? The long delivery chute will span the dockside tracks in a highly realistic fashion, its lattice girder construction enhancing the industrial nature of the site. Another possibility is feeding coal into a power station or gasworks; possibly the conveyor could span the main-line tracks and discharge the model coal into a suitable building housing an easily removable tray into which the coal is shot.

Nor need you restrict your load to coal. These conveyors are used wherever it is desired to transport bulk minerals for a comparatively short distance beyond the unloading point, and can just as easily handle limestone for a cement works.

Although produced as part of the popular Trix range of railway equipment, the elevator conveyor can be used in conjunction with any "OO" gauge system, and the modeller's dump wagon set (reviewed April 1956 R.M.) enables the dump wagon to be fitted into any other system with a little adaptation of the tracks.

SECTIONAL TRACK PLANS, No. 2: FOR TRI-ANG TRACK



This month's plan shows what can be done with standard straight and curved lengths only. It can also be extended in either direction by the addition of more straight lengths if so desired.

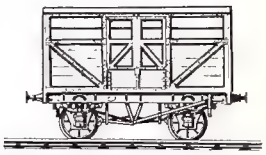
MATERIALS REQUIRED:

21 curves | 16 straights | 1 R.H. point | 3 L.H. points | 3 terminal rails (T)

(Also suitable for Trix with the addition of four quarter-straights)

Vehicles and their uses

CATTLE TRUCKS



THE cattle truck is perhaps the oldest of special vehicles, and, moreover, one which has hardly altered in a century of use, for early prints show vehicles clearly recognizable without their loads.

Basically the cattle van can be regarded as a box van with open-topped sides enclosed by bars. Present-day stock is equipped with vacuum brakes and rated XP, and can thus be run in express freight or at the rear of ordinary passenger trains.

Livestock has always been worked at as high a speed as possible, for humane and economic reasons. If a journey is to take any length of time, it is vital to water the cattle en route ; thus, wherever possible, the journey is timed so that this can be done at the beginning and end of the trip to avoid delay.

Normally cattle trucks will be found in ones and twos in general and express goods trains, or attached to local passenger workings, but complete cattle trains are run in conjunction with the larger cattle fairs and agricultural shows, while the occasional transfer of a farmer's stock to a distant holding results in one of the most interesting of special trains, consisting of a coach for the farmer and his staff, dozens of cattle trucks for the livestock and a selection of vans and wagons for the various implements.

RAILWAY MODELLING IN A SECONDARY MODERN SCHOOL

MR. Ithel H. Owen, B.A., geography master at the Penmaenmawr Secondary Modern School, who is a keen modelmaker, and myself, the handicrafts master, decided to combine forces and departments to build a scale model of the privately owned railway of the Penrhyn Slate Quarry, Bethesda, North Wales. This was to run in the form of a " project with Form I," boys and girls.

Groups of boys were taken to visit the quarry, track and rolling stock. Several visits were made and photographs and sketches were collected, until a very sizeable notebook was filled with facts and figures of the whole layout.

Work started last January on the track, which is four feet long and ten inches wide, the port and quarry ends being five feet by three feet. The gauge of the actual track is 1ft. 11½in. We decided to use " OO " gauge track, this giving us a scale of $\frac{5}{16}$in. to one foot.

GEM Flexi-Track was used and the boys found no difficulty in laying this. Marshalling yards were made at the quarry and port ends.

Sawdust was dyed to various shades of green to form grass and foliage. Bridges were cast from plastic moulds made from plasticine. While the boys were occupied on this work Mr. Owen and myself started work on the engines. Messrs. Hunslet of Leeds kindly supplied us with working drawings of the engines in use. These were built in 1895 and still run daily along the six-mile railway from the quarry to Port Penrhyn.

Two GEM X5 motors were fitted into the engines, and it is a credit to the Mellor factory that these motors ran continuously for at least seven hours up and down the forty-seven feet of track on our open day at school without a hitch.

May we here thank Mr. Mellor for all the helpful advice he gave us?

The trucks were constructed out of $\frac{1}{8}$in. angle brass, " OO " wagon strips and soldering tags as axle boxes.

During this time, in between workshop activities on the model, classwork was also proceeding. The children learnt the local geography and history of the railway from the time it was drawn by horses to the present day. Electricity, mathematics and scale drawing were the basis of many lessons revolving around the main theme of the slate-quarrying industry of North Wales.

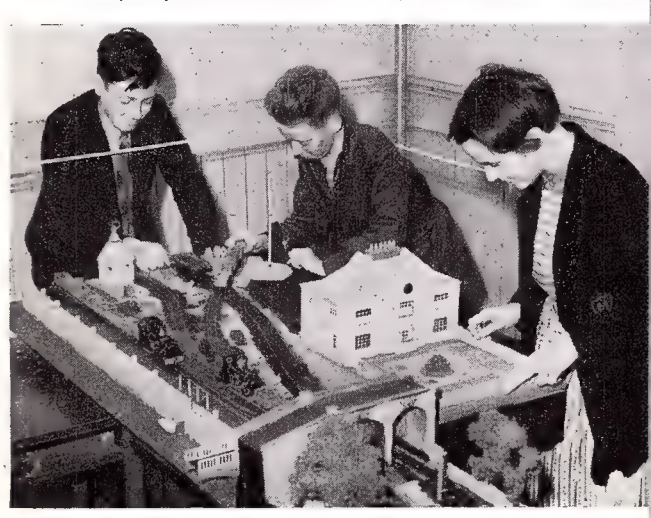
All the features were included in the forty-seven feet of track, which included two level crossings, a signal-box and signals, loop, eight road and rail bridges, one bridge over the river Cegin, a B.R. viaduct and about two miles to scale of a B.R. branch line running to the port.

The rolling stock consists of the two locos, Blanche and Linda, and 50 trucks.

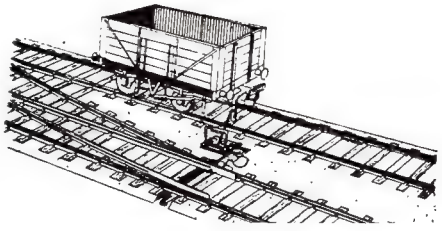
Nearly 600 people visited the school on " opening " and the quarry official who was among our visitors has arranged for the model to be on exhibition at Bethesda so that the quarry employees can see it.

R. GLYN GRIFFITHS,
Handicrafts Master.

John Williams, Dennis Roberts and Enid Roberts of Form I putting finishing touches to the model of the dock and quarry offices at Port Penhryn, Bangor.



Peco Topics



CHANGE TO SCALE TWO-RAIL

Part 4

Triangles, Reversing Loops and Diamonds

SO far we have only concerned ourselves with straightforward pointwork, for, as most readers realize, the majority of model railways do not consist of anything else. However, many people do incorporate at least one diamond crossing in their schemes, and these can be quite easily electrified. If dead frogs are used, that is to say if the frogs are not connected electrically to the rest of the layout and the locomotive collectors are permitted to bridge the gap thus formed, no problem exists at all, for, as will be seen in Fig. 10, the two roads can be made

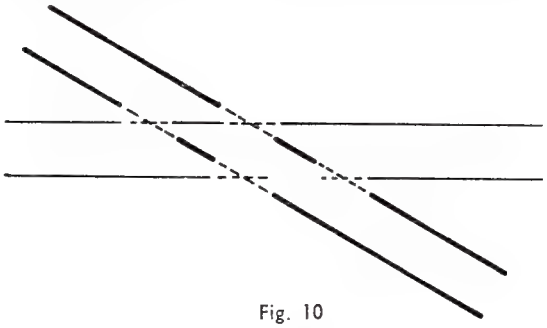


Fig. 10

to cross without any electrical connection whatsoever. This particular arrangement should be used wherever two independent lines pass over each other, as for example in the diamond in a double junction; this prevents any interaction between the up and down controllers; but where the diamond forms part of a yard, only the "V" frogs need be isolated, as shown in Fig. 11. The wiring in Fig. 11 also applies to both double and single slip points.

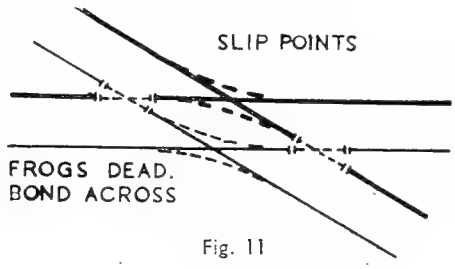


Fig. 11

The switch diamond, that is to say the diamond whose "K" frogs are closed by means of point blades, or the more common case of the universal switch diamond, should be regarded as a pair of stub points face to face. Feeds will be needed as shown, and in most cases breaks in both rails on both sides of the crossing.

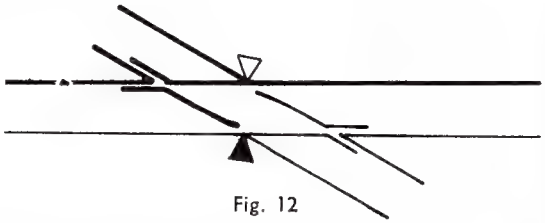


Fig. 12

The reversing loop and triangle is perhaps the most difficult piece of trackwork to wire for two-rail. It will be realized that, as the tracks traverse the loop or triangle, at some point the right-hand rail becomes the left-hand rail, and thus, unless breaks are included, short circuits are inevitable. The reversing loop is best treated as a separate entity in the loop and completely isolated by breaks in both rails. This

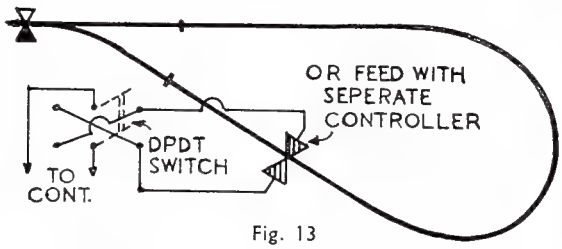


Fig. 13

section is then fed through a double-pole double-throw reversing switch wired directly to the controller, as shown in Fig. 13. To run round the loop the point is set in one direction and the train permitted

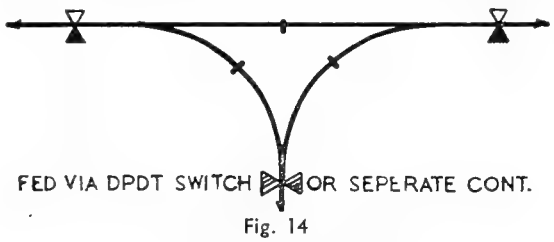


Fig. 14

(*Continued on page 241*)

CLUB NOTICE BOARD

featuring popular personalities and society news

Personality Parade No. 58

W. Loch Kidston is a lawyer, aged over forty, and has been in the hobby since before the first issue of the world's first purely model railway periodical, the *Model Railway News*, in 1925. He started in British gauge "O" with tinplate pre-1914 and followed with Hornby and Bassett-Lowke in the twenties, graduating to a permanent line first of tinplate and then of solid steel rails. About 1928, disgusted by the lack of standards and the "steam-roller" wheels of those days, he disposed of the growing really model line—it had scenery (rare in those days), and third rail and the beginnings of modern control—and put away the rolling stock.

After "arm-chairing" for some years, mainly in the driver's seat of a Riley 9, the petrol restrictions of the second war brought him back to more active work. He gravitated to his present primary interest as a hobby, American railroads, both model "HO" and prototype, and N.M.R.A.

In 1950 he took the initiative in forming the Edinburgh and Lothians Miniature Railway Club and was its first secretary and secured its first premises, the whole of Davidson's Mains station on the newly abandoned Barnton Branch. There the club's present fine "OO" gauge line first saw the light.

A surprise opportunity to buy a complete vintage gauge "1" line later gave him an opportunity to join the Gauge "1" Society, and from that stemmed the idea of testing the hobby's views on a similar body for the increasingly paralytic Gauge "O"—probably the handiest all-round size for the average enthusiast, being equally at home indoors and out. He is now joint president of the newly formed Gauge "O" Guild.

W. Loch Kidston

Gauge "1" Association
Gauge "O" Guild
NMRA (British Region)

NOTES AND NEWS

Copy for these columns must be received five weeks before publication.

THE BRISTOL 7.4.2. CLUB

The above society holds meetings at 1 Richmond Park Road, Clifton, Bristol 8, at 7.30 p.m. every Friday. All inquiries concerning membership and activities should be addressed to the hon. secretary, Mr. G. J. Faulkner, 71 Hamilton Road, Bristol 3.

COULSDON MODEL RAILWAY SOCIETY

The society wishes to announce that "Twenty-one Years," the booklet describing its activities from the early days of its existence, is still available, price 1/-, also that the hon. secretary's address is now 32 Downs Court Road, Purley, Surrey.

Meetings are held on the first and third Mondays each month at the Coulsdon Working Men's Club, Victoria Road, Coulsdon, at 8 p.m., and new members are always welcome.

NORTH MIDDLESEX MODEL RAILWAY CLUB

The highlight of October for the club is its participation in the Transport Exhibition held at the Gaumont Cinema, Wood Green, from Saturday, October 6, for one week at the invitation of the Wood Green Borough Council. The club will be operating its combined two-rail and three-rail layout from 6 o'clock each evening.

Outings for the winter season have been arranged for members to visit various loco sheds around west and north-west London.

Modellers in and around the Palmers Green area are cordially invited to attend the club's weekly meetings held every Wednesday from 7.30-10 p.m. at Lacey Hall, Hazelwood Lane, Palmers Green.

Particulars of membership may be had from Mr. R. A. Mills, 37 Compton Road, Winchmore Hill, N.21.

THE RAMSGATE & DISTRICT MODEL CLUB

Next month the above club will be holding its annual competition and awarding cups for successful entries under the following categories: the "Webb" cup for boats, the "Rengert" cup for the best engineering model (this covers most of the club's activities), the "Guttridge" founder cup for handicrafts, etc. (this usually appeals to the lady members) and the "Cobb" junior cup for the best model submitted by a junior member.

The club is looking forward to a large number of entries in this section and is hoping to have some keen competition throughout.

Just a reminder: the club's new address is at the rear of the fire station in Effingham Street, Ramsgate, where it has now settled in and activities are proceeding normally. Club nights are on Wednesday and Friday evenings from 7.30 until 9.30 and a hearty welcome is extended to all who are interested. E. Church, hon. secretary, 14 St. Mildred's Avenue, Ramsgate.

MODEL RAILWAY CLUB AT R.A.F. STATION

A model railway club was formed recently at Royal Air Force Station Swanton Morley, Dereham, Norfolk. The membership now numbers nearly twenty enthusiasts, and an "OO" gauge layout is in process of construction in a room approximately twenty feet square.

The club regrets that it cannot invite civilians to become members, but would welcome any model railway enthusiasts from neighbouring R.A.F. stations. It would also be interested to hear from any other railway modeller in the service. Inquiries should be addressed to Fg. Off. K. E. Wallis, Officer i/c. Model Railway Group, Royal Air Force, Swanton Morley, Dereham, Norfolk.

OCTOBER MEETINGS

BIRMINGHAM MODEL RAILWAY CLUB
3 Talk by Mr. B. Jepson.
11 16.5mm. layout construction.
17 Talk.
25 16.5mm. layout construction.
31 Jumble sale.

BRISTOL 7.4.2 CLUB
12 Annual general meeting.

FYLDE MODEL RAILWAY SOCIETY
2 "Low-relief modelling." Mr. S. Hall.
16 Open night.
30 "Workshop tools and practice." Mr. W. Nicholls.

HISTORICAL MODEL RAILWAY SOCIETY
15 "Stirling and his G.N.R. locos." Mr. J. E. Kite.

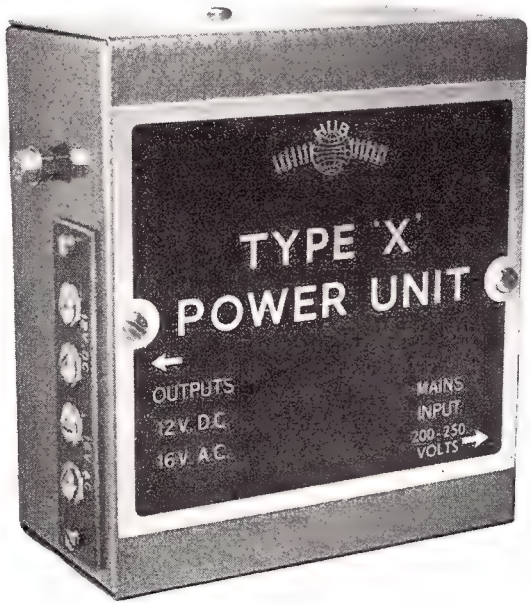
HODDESDON & DISTRICT MODEL RAILWAY SOCIETY
10 Signalling—film show.
24 Layout construction.

MODEL RAILWAY CLUB
4 Lecture, "Out-of-the-way lines worth modelling." Mr. L. Ward. At Caxton Hall, S.W.1.
18 Track night: S.R.
25 Lecture, "The Sherwood Sections of the L.M.S., 1921-1956." Mr. N. S. Eagles. At Caxton Hall, S.W.1.

WIMBLEDON MODEL RAILWAY CLUB
10 "Railway history and modelling." Mr. A. P. Hancox.
20 Private exhibition and social.
24 "L.T.E. Rolling Stock." Mr. H. P. Roberts.

NEWS AND VIEWS OF TRADE INTEREST TRADE

TAYLOR AND McKENNA POWER UNITS



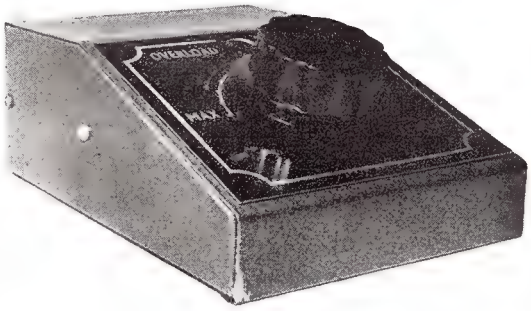
THE popular range of "HUB" power units has been extended and improved, and our illustrations show the neat appearance of the new units. The "HUB" Mk. III gives an output of 1½ amps at 12 volts D.C., controlled, and has an additional 16-volt A.C. output and a power link, which enables the unit to be adapted to give full- or half-wave rectification if so desired.

Control is by means of a large, comfortably shaped knob mounted on a sloping panel in the front of the unit, above which is placed a red overload warning light. The controller is of the popular centre-zero pattern, giving single-knob control for both speed and reverse.

To convert the unit to pulse power the pulse power link should be removed (it is a small metal plate joining the two terminals). This converts the full-wave rectifier into a half-wave unit, but if, as we recommend, it is desired to make the pulse power feature optional the pulse power terminals should be bridged by an on-off switch, or better still a 100-ohm variable resistance with an "off" position. This should be mounted in a convenient position near to the main control panel so that it is under the full control of the operator.

The mains input is by means of a three-core cable, thus providing an adequate earth, which passes into the case through a substantial rubber grommet. The metal case is finished in an attractive mottle grey with a black and silver escutcheon plate. The output screws are clearly marked. The price complete is 57s. 6d.

The type "X" power unit is constructed to the same general specification as the "HUB" Mk. III, but only gives a straight 12-volt D.C. and 16-volt A.C. output. Thus a separate controller will be needed if the unit is to be used for traction, but an

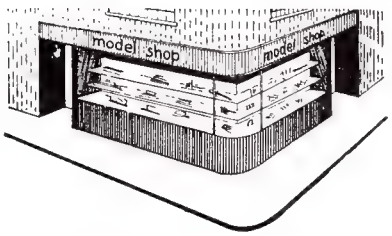


additional use would be as an entirely separate power supply for point and signal motors, to avoid using the main unit, for although it is possible to use the "HUB" unit for these auxiliary items it is convenient to use a separate supply if the layout is at all large. The type "X" power unit costs the modest sum of 39s. 6d.

MERIT TREE KITS

Do you want a large forest of assorted conifers quickly and cheaply? If so, the Merit plastic tree kits are the answer. We show above an assortment of trees built from a single 3s. 6d. kit supplied to us by Precision Model Engineering, of Liverpool. How-

WINDOW



ever, the limitations of monochrome photography cannot do justice to these excellent models, which have been admired by all visitors to our offices.

The kits are moulded from polythene, which, as we all know, is flexible and virtually unbreakable. Each "layer" of leaves is moulded separately, and is provided at the top with a spigot and at the bottom with a socket so that the trees can be assembled in any order, to any reasonable height. Three types of trunk are supplied, the splayed roots providing a firm base when standing free on a level surface. They would be equally suitable for keying into a plaster scenic foundation.

Owing to the irregular nature of each leaf layer it is a simple matter to produce from a few standard units a wide variety of different patterns of fir trees, so that for a very reasonable sum it is possible to model a wood, or even a small forest, in the odd corners of the baseboard.

50-1 GEAR SETS

Precision Model Engineering, of Liverpool, have recently introduced reduction gear sets, suitable for use with standard "OO" mechanisms, giving an overall ratio of 50-1 reduction. These sets are available in two patterns, with bronze or "Akulon" worm-wheels, the worm in each case being steel. Setscrews are included in both worm and wheel. These units will be of considerable interest to all locomotive constructors who desire a particularly low gear ratio for their main drive.

IRISH NARROW-GAUGE BLUEPRINTS

We have had the opportunity of inspecting samples of the blueprints of Irish narrow-gauge stock prepared by Mr. B. Heaven, of Chiddingfold, Surrey, whose small advertisement appears in this issue. The drawings are neatly executed, and the quality is good. The range also includes road vehicles and certain British coaches. A complete list can be had on application to Mr. Heaven. A stamped addressed envelope should be enclosed.

CORRECTION

In Messrs. Hammant and Morgan's August advertisement the two lines which should have read "Send 3d. for complete Hammant and Morgan catalogue" were inadvertently transposed. We wish to apologize to our valued advertisers and to readers for any inconvenience caused by this mistake.

PECO TOPICS

(*Continued from page 238*)

to traverse it. It is then brought to a halt, the reversing switch thrown, and the point changed and the controller reversed so that the train now runs out in the opposition direction.

It is, of course, possible to couple the double-pole double-throw switch to the point blades, where only one point feeds the reversing loop. This, of course, involves stopping the train while it is on the loop. As in most cases the reversing loop is used to return a train to a terminus, and frequently some portion of it is tunnelled and possibly supplied with storage loops in which trains are deliberately held in any case, this does not matter. Should, however, it be necessary to carry out the reversal in full view, then the best solution is to place a small station somewhere on the loop, at which the train may reasonably be brought to a standstill.

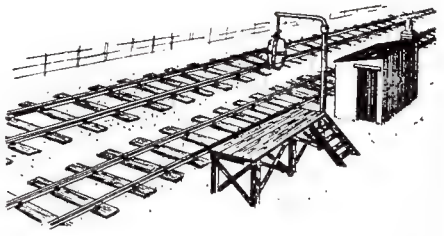
However, if it is desired to get continuous running around the reversing loop, then a separate controller can be coupled to the loop alone. Thus, if the train is run on to the loop with the main controller, and the loop controller is set in unison before the train runs off, the main controller must be reversed to accommodate the reverse direction of the train.

This arrangement is particularly useful where the reverse loop forms a major part of the main line feeding a separate terminus, which would naturally have its own controller.

In the case of a triangle, this latter arrangement is almost invariably the case; that is to say the triangle feeds, either directly or through a short length of main line, an independent terminus via one leg while the other two legs form part of the main line route. In this case the twin controller arrangement is undoubtedly the best approach, although the separate reversing switch can be applied equally well should it be desired to use but one controller.

There is, unfortunately, no simple solution to the reversing loop problem, as so much depends upon the position of the reversing loop in relation to the rest of the track. We do appreciate that there are, on certain layouts, tricky points of wiring which may baffle the beginner, and we therefore offer to mark the positions of feeds and breaks on any layout plan supplied to us for this purpose. We do, however, make certain stipulations. First, we prefer the plan to be drawn on a separate sheet of paper to a reasonably large scale, preferably one inch to the foot, and that the positions of such important items as platforms be clearly shown. In addition, we will, if requested, express our opinion as to the suitability of the plan for the proposed type of operation, and offer any constructive suggestions that may occur to us. Needless to say, a stamped addressed envelope should be enclosed with every inquiry for the return of the plan.

READERS' LETTERS



IN PRAISE OF TRAMS

I feel I must write and express my appreciation of the excellent issues of the RAILWAY MODELLER you are producing of late. I have one criticism—your phrase "For the Average Enthusiast." I do not like that word "Average." It seems to convey the impression that yours is a journal catering for the any-old-how, couldn't-care-less, slap-it-on-modeller! Cut it out, or at least alter it to read "For the keen miniature railway enthusiast."

However, having got that off the track, I might also mention that I am very, very pleased with the fact that you are publicizing (at long last) the tramway branch of the hobby. Prototype trams may be almost extinct (unfortunately), but I feel sure that many modellers are turning to trams as a pastime. The advantages are obvious: one tram is one complete unit, whereas one locomotive needs umpteen carriages or wagons to make up the complete unit, plus half a mile of platform or siding!

Would it be too much to ask the manufacturers, ever ready to turn out things not of the track (for instance, buses, those clattering monstrosities that are threatening the railways' existence), to turn out some model tram kits or model tramcars complete—plus a decent bit of range in accessories such as trolley poles, conduit track and all the rest? These are easily made, no doubt, by the modeller himself, but after all the essence of a tramway is the operating of it, as is the essence of a railway.

And one last thing. Must the manufacturers continue to turn out L.M.S., L.M.S., L.M.S., L.M.S., L.M.S.? Have they never heard of the Southern, Southern, Southern, or the grand old Great Western? A growing need exists for Southern and G.W.R. coaches and locos. Add the trams on to that and that just about completes my quota of grumbles for a few weeks.

S. P. HARRIS.

London, S.E.22.

We chose "Average" deliberately: it does not denote "couldn't-care-less," but rather indicates the modeller who does not specialize as opposed to the "expert." Many of our readers like the term, considering themselves average.—ED., R.M.

AUTO-COUPLING

It is no doubt agreed that when using Peco-Simplex auto-couplers it is impossible to install decoupling ramps to provide for every possible operation. I have found that a small pocket screwdriver, as is probably handy on most layouts, if magnetized by any convenient method, may be used to disconnect the couplings. Apply the tool first to the back of one coupling, and then to the back of the other. This method is most useful in situations where lineside structures or vehicles on an adjacent track make it rather awkward to lift and rerail the vehicle to be uncoupled, especially if it is a bogie vehicle.

Finally, I would like to ask through the columns of the RAILWAY MODELLER why no manufacturer has seen fit to produce a 4mm. "OO" model of either London Transport Underground or Tube stock. (The only model of this type ever produced, that by "Ever-Ready" was totally unlike any actual L.T.E. stock.) The possibilities of an L.T.E. or L.T.E. main-line layout are very great indeed. Such a possibility is the modelling of the Mill Hill East branch of the L.T.E. Northern Line. From Finchley Central the single line is operated by L.T.E. stock as far as Mill Hill East, but beyond here, although the electrification to Edgware was started, it was abandoned, and the line is now closed to passenger traffic. A goods service, however, operated along the whole line, the motive power being L.N.E.R. N7 0-6-2 tanks.

E. A. RUDOLPH.

Mill Hill, N.W.7.

NOISE

In answer to Mr. P. Hewitt's letter in the August issue of the RAILWAY MODELLER on deadening noise, surely this comes under the heading, in railway modelling, of tracklaying, and it is therefore a personal choice as to how the modeller tackles this particular branch of the hobby. Then, if it is so stupid, as Mr. Hewitt says, to deaden the noise, surely many other items of railway modelling must be stupid also, as the way in which one's layout and models are constructed is a matter of personal likes and dislikes.

I think Mr. Hewitt fails to realize that not only does felt, cork, rubber or what have you reduce noise, but it *considerably improves the running of the layout.*

I am not, however, speaking in direct defence of the silent band of noise deadeners, but I feel, as no doubt others will, that Mr. Hewitt should give and take a little in this matter. "One man's meat . . ." as the saying goes!

C. J. EVANS.

Melksham, Wilts.

Very few of your readers will agree with your correspondent Mr. P. Hewitt, for two reasons. Firstly, the noises made by model electric or spring-driven steam-outline locomotives are the wrong noises. Secondly, they are in the former case excessive. The only man who can rejoice in these noises is he who follows an electric prototype such as the Southern or Eastern Region.

Unfortunately the metal body of the engine magnifies the motor noise, acting as a resonator, so that it is not uncommon to hear a tiny locomotive emitting a noise like a coffee grinder at work on seven pounds of bean. This tendency of tiny motors to

emit such a row is a problem I have never been able to understand. I have carried out several experiments to lessen the noise, but so far without any appreciable success. To save other experimenters' time I may mention that these have included packing the body with cotton wool and insulating the body from the chassis with cork. The former ended by a strand catching on the armature shaft (it would!), and my having to pick it out with tweezers for an hour or so, besides which it was quite ineffective. The insulation of the chassis from the body with pieces of $\frac{1}{32}$in. or $\frac{1}{16}$in. cork lessens the resonating effect of the body, but vibrations still pass through the screws.

Mr. Hewitt misses the point of the right noise (hence the "sound effects"), but I do not seek to convince him. After all, model railway construction is our hobby, and however odd the other man's ideas may seem it is *his* hobby too.

It would be interesting to hear from others who, like myself, have tried to lessen the horrible grinding noise which most small motors emit. Perhaps some scientific expert "wasting his sweetness on the desert air" has solved the problem.

STANLEY PETERS.

Holywood, Belfast.

I was very interested in Mr. P. Hewitt's letter in the issue for August 1956 on the subject of noise from model railways. I have done quite a bit of experimenting in this field of activity in our hobby and, as far as I see the problem, one has to differentiate between noises which are railwaylike and those which are not. I very soon came to the conclusion that the continual effect of "roaring rails" caused by model railways on trackwork constructed direct on staging built up of boards or hardboard—either of the full-table-top or of the multi-level type—was quite unrealistic. I admit that in my case, being "O" gauge, more noise is probably caused than would be the case on a "OO" gauge layout. I came to the conclusion that what was wanted was suppression of unrailwaylike noises with, at the same time, a slight amplification of pleasant railwaylike sounds, such as wheel-click over rail joints, etc. This state of affairs I have achieved on my "O" gauge layout by covering the whole of the railway staging with cheap-quality underfelt about $\frac{1}{4}$in. thick. The result of this has been very smooth and steady running with the added advantages that in "O" gauge where loose track ballast is used the latter does not scatter; furthermore, there is complete elimination of any "roaring rails" effect, which is the type of noise that offends people in other rooms in the house, or possibly even in the house or flat next door, while at the same time there is a slight resultant amplification of those sounds, such as wheel-click over rail joints and at points and crossings, etc., which are pleasant to the ear of the model railway enthusiast.

I should perhaps say that the staging of my layout is of the full-table-top type, any slight changes in gradient being purely accidental. Nevertheless, it should not be a very difficult matter to cover all "ground" with underfelt in the same way on layouts built up on the tiered system.

Readers who may from time to time be in this district and are interested in the results of noise control, or in the layout itself, will be afforded a friendly welcome. Letters c/o the Editor, RAILWAY MODELLER, please.

A. SHACKLETON.

Ilkley.

A CLOCKWORK SURVEY

As a result of a recent letter published in this magazine on the subject of clockwork gauge "O" engines, a great number of letters have reached me. I would like to thank you for the opportunity of reaching—through your pages—so many spring-drive supporters. I am trying to reply to everyone who has written, but every post brings another small avalanche of letters.

In case I am unable to reply personally to those who have written, I take this opportunity of thanking them, and assuring my correspondents that the points raised in their letters are being carefully summarized.

May I also suggest that those who are really interested in this business of clockwork drive should join the new Gauge "O" Guild, which is making this one of its concerns? The hon. secretary is Mr. H. Bower, 81 The Drive, Bexley, Kent, from whom details are obtainable.

In conclusion I would say that I hope, with the Editor's permission, to publish the results of this inquiry in these pages. This may possibly take the form of an official report from the Gauge "O" Guild.

J. L. RAY.

Ipswich, Suffolk.

TO WHOM IT MAY CONCERN

I have been very much annoyed by having the authorship of some misleading Welshpool and Llanfair drawings attached to my name. Further, my researches into the Cambrian and Vale of Rheidol have been adversely affected by this confusion of similar initials and names.

The rolling stock and Vale of Rheidol notes which appeared in the RAILWAY MODELLER up to last April were compiled from my own work and measurements, and anyone who has attempted this type of "field work" will appreciate what it entails. I shall doubtless have made minor errors and I will apologize for and correct them as they are brought to notice. It is also my belief that speculative statements should be phrased so as to invite constructive correspondence, and not be stated as facts.

In future I shall sign all letters to fellow modellers under my nickname, so as to be sure that the similarity of name and initials will no longer confuse. Will anyone who has a letter from me as yet not answered by him please note this?

RICK GREEN
(writing formerly as C. C. Green).

Birmingham.

MARDEN VALLEY AGAIN

Mr. King's Marden Valley line, described in the August RAILWAY MODELLER, seems to me a good example of a small but original and faithful model railway. Readers will note that the modelling of the prototype does not end with the locos and stock, but buildings, signals, water pipes, etc., are correctly modelled, or will be. True it is sometimes difficult to get drawings of prototypes of some pre-group lines, but if obtainable it is worth the effort. To a keen railway fan, water pipes, fences and most railway effects all represent the owning company. If that company is the Highland (and must I also mention the Great Western, etc. ?) then the atmosphere is there and completes the picture with the correct locos and stock.

E. BANKINS.

Ruislip.

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The Bureau is at your disposal to assist you with your problems. The service is free, individual and personal, but we reserve the right to publish any query we consider to be of interest. The advice given is based on the experience and opinions of our staff.

Queries should be addressed to the Peco Technical Advice Bureau, Pecoway, Station Road, Seaton, and should be accompanied by a s.a.e. and coupon on page ix. We regret that we cannot prepare special designs for individual readers.

I wonder if you could tell me the correct way to make papier mâché.

F.A.N., LEEDS.

The accepted method of making papier mâché is to tear newsprint or similar absorbent paper into small scraps, and to soak it for a considerable time in a bucket of water until the paper fibres break up completely. Surplus water is then poured away and the material used while wet. When dry it will be found to be absolutely hard, but we would point out that this drying time is prolonged and may take anything over twenty-four hours, certainly nothing less. A small amount of size may be added to the mixture. Furthermore, powder colours may be mixed in with papier mâché if so desired.

A quicker method of using paper for scenery is to build up a rough framework of light timber and card, and paste scraps of paper over this at random. This produces a light, firm surface which can subsequently be painted and modelled, but this is not true papier mâché.

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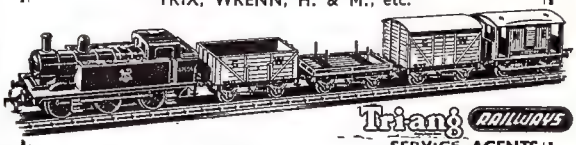

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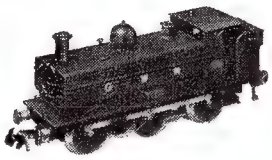

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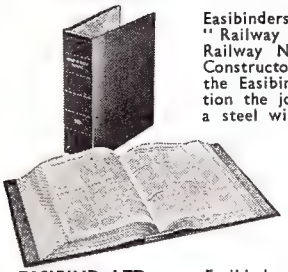

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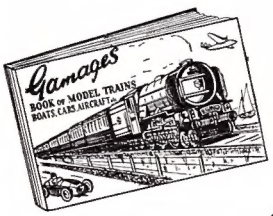

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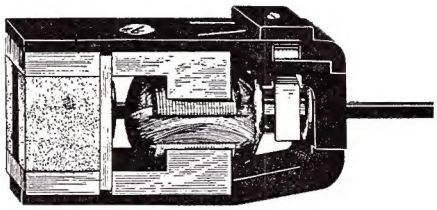

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